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**IMPACT OF ACCESS TO LIVELIHOOD ASSETS TOWARDS  
SUSTAINABLE POVERTY REDUCTION IN SOKOTO STATE,  
NIGERIA**



**UUM**  
**YUSUFKASIM**  
Universiti Utara Malaysia

**DOCTOR OF PHILOSOPHY  
UNIVERSITI UTARA MALAYSIA  
2018**



**IMPACT OF ACCESS TO LIVELIHOOD ASSETS TOWARDS  
SUSTAINABLE POVERTY REDUCTION IN SOKOTO STATE,  
NIGERIA**



**UUM**

**YUSUF KASIM (900912)**

Universiti Utara Malaysia

**A Thesis Submitted to the Ghazali Shafie Graduate School of Government  
in fulfillment of the requirements for the Doctor of Philosophy  
Universiti Utara Malaysia**



Kolej Undang-Undang, Kerajaan dan Pengajian Antarabangsa  
(College of Law, Government and International Studies)  
Universiti Utara Malaysia

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(External Examiner) **YUSOFF**

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Pemeriksa Dalam : **DR. AZ ILZANTALB**  
(Internal Examiner)

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(Name of Student) : YUSUF KASIM (900912)

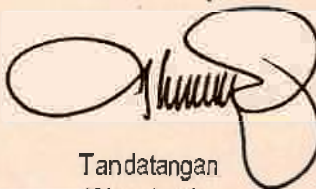
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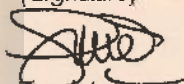
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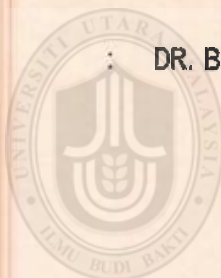
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## ABSTRACT

The issue of poverty has become a global concern of which tackling the concerned issue would necessitate the commitments from the affected households and relevant institutions. Poverty is an outcome from a multitude of causes, ranging from economic, political to social factors. However, poverty is seen in this study as lack of sustainability in livelihoods among households. This condition is due to their lack of access to livelihood assets, effective livelihood strategy and proper government support which are fundamental in ensuring sustainable livelihood and fighting poverty. The study was conducted in Nigeria, particularly Sokoto State, which has been described by some institutions as the state with the highest incidence of poverty in the country. Hence, this study is designed to examine the impact of access to livelihood asset, adoption of livelihood strategy and moderating effect of government intervention towards ensuring sustainable livelihood and poverty reduction in Sokoto State, Nigeria. The study adopted quantitative approach, of which the survey method was used to collect data through stratified simple random sampling. A total of 323 data from respondents were received and analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM). The research findings showed that there is significant positive relationship between access to livelihood asset, livelihood strategy and sustainable livelihood which in turn lead to sustainable poverty reduction. On the moderating factor, government intervention was found to affect the relationship between access to physical asset and sustainable poverty reduction, albeit there is no effect on the relationship between other livelihood assets, livelihood strategy and sustainable poverty reduction. This study recommends that in order for sustainable livelihoods and poverty reduction to be achieved in Nigeria and Sokoto State in particular, ownership of livelihood assets and developing effective livelihood strategies are very crucial, while efficient government support must be in place to ensure that household livelihoods are secured. The study draws from Malaysia's strategy of poverty reduction and thus, recommends a comprehensive policy action that addresses important opportunities for entrepreneurship, microfinance scheme, technical and vocational skill, land reform, infrastructural development, and social protection, as an essential strategy for poverty reduction.

**Keywords:** Livelihood Assets, Livelihood Strategy, Government Intervention, Sustainable Poverty Reduction, Nigeria.

## ABSTRAK

Isu kemiskinan telah menjadi kebimbangan di peringkat global, di mana usaha untuk memerangnya memerlukan komitmen daripada semua pihak, termasuk isi rumah dan institusi yang berkaitan. Kemiskinan wujud daripada pelbagai faktor yang meliputi aspek ekonomi, politik, dan sosial. Walaupun bagaimanapun, kajian ini melihat kemiskinan sebagai kekurangan kelestarian dalam aset kehidupan di kalangan isi rumah. Keadaan ini disebabkan oleh kurangnya akses kepada aset kehidupan, strategi penghidupan yang berkesan, dan sokongan kerajaan yang bersesuaian. Perkara ini menjadi asas di dalam menjamin kelestarian kehidupan dan menghapuskan kemiskinan. Kajian ini dijalankan di Sokoto, Nigeria. Sokoto merupakan sebuah negeri yang mempunyai kadar kemiskinan yang paling tertinggi di Nigeria. Oleh itu, kajian ini dirancang untuk mengkaji impak akses kepada aset kehidupan, penggunaan strategi penghidupan, dan kesan penyederhana intervensi kerajaan untuk memastikan kelestarian penghidupan dan pengurangan kemiskinan di Negeri Sokoto, Nigeria. Kajian ini menggunakan pendekatan kuantitatif, di mana kaedah kaji selidik telah digunakan untuk mengumpul data melalui pensampelan rawak mudah berstrata. Sebanyak 323 maklum balas dari responden telah diterima dan dianalisis dengan menggunakan *Partial Least Squares Structural Equation Modeling* (PLS-SEM). Hasil kajian menunjukkan bahawa terdapat hubungan positif yang signifikan antara akses kepada aset kehidupan, strategi penghidupan, dan kelestarian penghidupan, yang seterusnya membawa kepada kelestarian pengurangan kemiskinan. Intervensi kerajaan turut didapati mempengaruhi hubungan antara akses kepada aset fizikal dan pengurangan kemiskinan yang berkekalan, dan sebaliknya tiada kesan ke atas hubungan antara aset mata pencaharian lain, strategi mata pencarian, dan pengurangan kemiskinan yang lestari. Kajian ini mengesyorkan bahawa untuk mencapai kelestarian penghidupan dan mengurangkan kemiskinan di Nigeria dan Negeri Sokoto khususnya, pemilikan aset kehidupan dan pembangunan strategi daya tahan berkesan adalah sangat penting, sementara sokongan kerajaan yang ecekap perlu dilakukan untuk menjadikan isi rumah lebih kukuh. Kajian ini turut mengambil pengalaman daripada strategi Malaysia dalam mengurangkan kemiskinan dan mencadangkan tindakan dasar yang menyeluruh dengan mengambil kira peluang di dalam keusahawanan, skim pembiayaan mikro, kemahiran teknikal dan vokasional, pembaharuan tanah, pembangunan infrastruktur, dan perlindungan sosial sebagai strategi penting untuk mengurangkan kemiskinan.

**Kata kunci:** Aset kehidupan, Strategi Penghidupan, Intervensi Kerajaan, Kelestarian Pengurangan Kemiskinan, Nigeria.



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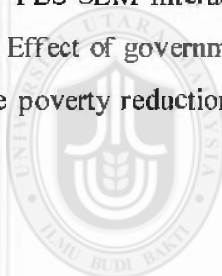


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Universiti Utara Malaysia

## LIST OF ABBREVIATIONS

<b>BR</b>	Brazil Real
<b>CBCM</b>	Community Based Co-Management
<b>CBFM</b>	Community Fishers Management
<b>CBN</b>	Cost of Basic Needs
<b>CP</b>	Coor Poor
<b>CPPL</b>	Coor Poor Poverty Line
<b>DCI</b>	Direct Calorie Intake
<b>DEM</b>	Deutsche Mark (German)
<b>ECA</b>	Economic Commission for Africa
<b>EXPL</b>	Extreme Poverty Line
<b>F4</b>	Family of Four (4)
<b>FA</b>	Financial Asset
<b>FBL</b>	Food Poverty Line
<b>FEI</b>	Food Energy Intake
<b>GI</b>	Government Intervention
<b>HA</b>	Human Asset
<b>HIES</b>	Household Income Expenditure Survey
<b>HNLSS</b>	Household National Living Survey
<b>INR</b>	Indian Rupee
<b>IPL</b>	International Poverty Line
<b>LBPL</b>	Lower Bound Poverty Line
<b>LS</b>	Livelihood Strategy
<b>MCE</b>	Malaysian Certificate of Education
<b>MDGs</b>	Millenium Development Goals
<b>MDPL</b>	Moderate Poverty Line
<b>MPI</b>	Multidimensional Poverty Index
<b>NA</b>	Natural Asset
<b>NBS</b>	National Bureau of Statistics
<b>NNPL</b>	Nigeria National Poverty Line
<b>NLP</b>	National Poverty Line
<b>OPHI</b>	Oxford Poverty and Human Development Initiative
<b>PA</b>	Physical Asset

<b>PM</b>	Poverty Measurement
<b>PPL</b>	Poor Poverty Line
<b>PPMC</b>	Pearson's Product Moment Correlation
<b>PPPI</b>	Purchasing Power Parity Index
<b>RM</b>	Ringgit Malaysia
<b>RPL</b>	Rural Poverty Line
<b>SA</b>	Social Asset
<b>SAR</b>	South African Rand
<b>SL</b>	Sustainable Livelihoods
<b>SPR</b>	Sustainable Poverty Reduction
<b>UBPL</b>	Upper Bound Poverty Line
<b>UNICEF</b>	United Nations Children Fund
<b>UK</b>	United Kingdom
<b>UND65</b>	Under65 Years
<b>UPL</b>	Urban Poverty Line
<b>USA</b>	United State of America
<b>USD</b>	United State Dollar
<b>WCED</b>	World Commission of Environment and Development

## **CHAPTER ONE**

### **INTRODUCTION**

*“Overcoming poverty is not a task of charity, it is an act of justice like slavery and apartheid, poverty is not natural, it is man-made and it can be overcome and eradicated by the action of human beings”.*

*Late Nelson Mandela, former South Africa's President.*

#### **1.1 Study Background**

Poverty has become the major nightmare that is bedeviling human race in the contemporary world, with its devastating effect mostly in the developing, less and least developed countries of the world (Ogbeide & Agu, 2015, African Union [AU], Economic Commission for Africa [ECA], African Development Bank [AfDB], & United Nation Development Programme [UNDP], 2016; UN, 2013, 2014, 2015, 2017; Alkire & Robles, 2017). It has been estimated that almost 2.8 billion people of the world's population live on less than \$2 a day, while another 1.4 billion of the same population live on less than \$1 per day (World Bank, 2009). The phenomenon of poverty in the world manifests itself most in Asian and African continents, resulting into deepening socio-economic crises, albeit with economic growth in some of the African countries (Hope, 2002, AU, ECA, AfDB, & UNDP, 2016).

Similarly, it has been further posited that there exists disparity in the global poverty trend with about 47.5 percent (within Africa) in the Sub-Saharan Africa amounting to 386 million people who lived below poverty gauge (line) of \$1.25 a day in 2008

(World Bank, 2012), and 389 million in 2012 (AU, ECA, AfDB & UNDP, 2016). Accordingly, it has been asserted that as at 2013 some 767 million people lived below the extreme poverty line, and by 2016 10 percent of the world employed and their families lived on less than \$1.90 per day, and between 2014 to 2016 some 793 million people were undernourished (United Nations [UN], 2017).

In the same way, the proportion of the extreme poor people in the world was espoused to be manifested in the Southern Asia and Sub-Saharan Africa accounting for 63 percent of the world's malnourished between 2014-2016 with about 155 million children undergrown and stunted (UN, 2017). In the same vein, Alkire and Robles (2017) stressed that some 1.45 billion people across 103 countries are multidimensional poor out of which 48 percent live in Southern Asia and Sub-Saharan Africa, 72 percent of which are in middle income societies and almost half of the global MPI poor are children. Furthermore, it was indicated that by 2012 about 389 million were poor with Africa having 42.8 percent, Latin and Caribbean 4.90 percent, Asia 11.40 percent, and in terms of Global Hunger Index (GHI) Sahel has 33.5 percent, Horn of Africa 29.7 percent, Great Lakes 27.7 percent and West Africa 26 percent. Overall, it was asserted that 32.2 percent in Africa faces extreme hunger, 29.4 percent in South Asia and West Africa 25.8 percent (AU, ECA, AfDB, & UNDP, 2016).

Additionally, according to United Nations [UN] (2015) in its MGDs report indicated that some 836 million were poor in 2015 and 12.9 percent ravaged by hunger, with world's extreme poor peoples' 80 percent domiciled in South Asia and Sub-Saharan Africa with more than 40 percent of the Sub-Saharan population living in extreme poverty as at 2015. Similarly, it was submitted that, one (1) in every five (5) people in

the third world societies is poor living on less than \$1.25, with an estimated 173 million people wallowing in chronic hunger between 2011-2013, therefore it was argued that majority of the population in South Asia and Sub-Saharan Africa lived on less than \$1.25 a day as such it was stated that meeting the MDGs goal of halving the rate of poverty in the regions is a mirage (United Nations [UN], 2014).

In a similar situation, it was estimated that 1.2 billion lived in poverty as at 2012 (showing an increase from 700 million in 2010), and 14.9 as impoverished and malnourished (United Nations [UN], 2013). Closely related, United Nations [UN] (2012) observed that, progress was made towards reducing the incidence of poverty and the rate of extreme poor, and particularly in South Asia and Sub-Saharan Africa, with reduction of the world's population of the poor from 2 billion to 1.4 billion, although there was a decline from 1990 to 2008 however about 1 billion people are projected to be in extreme poverty by 2015 with four (4) out of every five (5) people living in extreme poverty in both South Asia and Sub-Saharan Africa by 2015.

In the same vein, Nigeria which is the secondary context of the present study cannot be an exception, since by geographical providence it is part of the African continent, and Sub-Saharan region by implication. The nature of poverty in Nigeria has been explained in a multidimensional term with an incidence of 53.2 percent, 56.8 percent intensity, 8.2 percent vulnerable with 32.8 percent in severe poverty, and 66.8 percent as destitute (OPHI, 2017). Accordingly, it was posited that, poverty has been increasing in Nigeria with a Global Hunger Index value of 32.8 signifying that there is severe poverty (AU, ECA, AfDB, & UNDP, 2016).

According to United Nations [UN] (2015) Nigeria was amongst the the five (5) countries that constitute 60 percent of the global extreme poor people. Likewise, it was submitted that, one (1) in every five (5) people in the third world societies is poor living on less than \$1.25. The magnitude of poverty in this most populous black nation in the world is so alarming with an estimated 69 percent of the population within the shackles of poverty (National Bureau of Statistics [NBS], 2012). Within the Nigerian context incidence of poverty also varies with some states been classified as the poorest (NBS, 2012). Recently, the National Bureau of Statistics revealed states with over 70 percent poverty rate which includes Sokoto 81.2 percent Katsina 74.5 percent, Adamawa 74.2 percent, Gombe 74.2 percent, Jigawa 74.1 percent, Ebonyi 73.6 percent, Bauchi 73 percent, Kebbi 72 percent, and Zamfara 70.8 percent (Jacob, & Onwughalu, 2015).

Furthermore, Sokoto State as the primary (main) concern of this study is one of the (36) States that make up the Federal Republic of Nigeria and was created in 1976, from the former North-Western State. Presently Sokoto State is one of the seven (7) states that constitute the North-West geopolitical zone of Nigeria and has an estimated population of over 4.3 million people (NPC, 2010). High poverty incidence in Sokoto State made it to be identified as the poorest State in Nigeria, with a poverty incidence of 86.1 percent and 81.2 percent in 2011 and 2012 respectively (NBS, 2012, Thisday, 2013; Vanguard, 2013). The description of Sokoto State as the poorest state in Nigeria portrayed the image of the state in a bad light. However, Sokoto State is endowed with land and other resources that should have been the sources for improved well-being and sustained livelihoods earning. Recently the Oxford Poverty and Human Development Initiative [OPHI] in its country briefing of Nigeria indicated that Sokoto



State has multidimensional poverty incidence of 85.3 percent, intensity of 64.2 percent, vulnerable group 8.2 percent, with 66.4 percent in severe poverty and a destitute population of 66.8 percent which has indicated the alarming rate of poverty in Sokoto State on a multidimensional scale of health, education and living standard (OPHI, 2017).

Related to the rising scourge of poverty in Sokoto State is the dependence of over 70 percent of the Sokoto State's population on one form of agricultural production or another during the rainy season. The agricultural sector employs over 90 percent of the workforce in the state and has the potential of providing income and jobs to many rural dwellers as well as provision of food (Anyebe, 2015), however, only 52.1 percent percent of the arable land is under cultivation leaving 47.9 percent of the land uncultivated (Anyebe, 2015). Accordingly, it has been asserted that, only 14.4 percent of irrigable land is currently irrigated leaving 85.6 percent of irrigable land un-utilized (SSG, 2012), and some 3 million people residing in Sokoto State are living below poverty line of less than (one) \$1 (USD) a day (NBS 2012). The proportion of people living in relative poverty in Sokoto State increased from 37.9 percent in 1992 to 83.9 percent in 1996 but declined to 76.81 percent in 2004 (Shamaki, Rostam & Adamu, 2013a), while the proportion of those living in absolute poverty was 70.54 percent during the same period (SSG, 2012).

This worldwide spread of poverty makes effort towards addressing it a global one which seeks to make the world a decent place to live in, devoid of deprivations in the quest for livelihoods among the peoples of the world. Therefore, it has become paramount for the global community (politicians, policy-makers, academics,

researchers, governments and non-governmental organization) to join forces in confronting the menace of poverty.

## **1.2 Problem Statement**

The difficulty or inability to meet basic needs of an individual or household has been attributed to what is referred to as deprivation and by implication poverty (Ferraro, 2003; World- Bank, 2004). The deprivation is not only related to issues of food or income but transcends to other essential facets of human life, in the socio-economic, political and human capabilities, as well as education, thus poverty becomes multifaceted (UNDP, 1997; Mehta, 2005; Ravallion, 2011; Ferreira & Lugo, 2012; UNDP, 2010; Webster & Engberg-Pedersen, 2002). The overwhelming figure of people living in poverty in the world as at 2005, using US\$1.25 per day, some 1.38bn persons lived beneath the poverty benchmark (Chen, & Ravallion, 2008). Similarly, considering the multifaceted conception of poverty, some 1.7 billion people, that is, 78 percent of world's population is poor, and 50% of the same population lived in South Asia and 28 percent in Sub Sahara Africa; whereas 15 percent, 3 percent, 2 percent, 1 percent, lived in East Asia and Pacific, the Caribbean and Latin America, Arabian states, and commonwealth independent states respectively (Alkire & Santos, 2010).

Moreover, in a study concerning the world's most chronic poor, McKay, Baulch, Hisarcikilar, and Lawson (2004) opined that (using US\$1 a day, for 5 years) some 300-420million chronic poor in 1990 lived in South Asia and Sub-Saharan Africa, with 44 percent in the former and 29 percent in the latter. Similarly, Rice (2006) pointed out that there is more than half of the world's population ravaged by poverty, living

below the poverty bench mark of US\$2 and some 1.1 billion persons below US\$1 a day. At the center of the menace of poverty is Sub-Saharan Africa as it was asserted that, about 44 percent of the population lived in poverty as at 2002 (World Bank, 2006).

Recently, literature indicated that despite efforts to reduce or eradicate poverty in the world there is still large cache of extreme poor in the World, in particular, 767 million persons are estimated to be in extreme poverty with about 793 million in hunger as at 2016 (UN, 2017). Similarly, Alkire and Robles (2017) observed that 1.45 billion persons in the world are facing challenges multidimensional poverty ranging from lack of education, good health, to that lack of access to good drinking water, lack of electricity, non-access to cooking fuel and sanitation facility and lack of assets.

More so, Nigeria which by geographical providence falls into Sub-Saharan Africa has its own share of poverty incidence which has reached an alarming rate (Okunmadewa, Yusuf & Omonona, 2005); despite a performing economy with a growth rate (that should have occasioned reduction of poverty) of 6 percent even at the peak of global financial meltdown (Nwaobi, 2003; Omolola, 2008; Ajakaiye & Jerome, 2011; Hassan, Abubakar, & Agboni, 2012; International Monetary Fund [IMF], 2013). Additionally, Nigeria as the most populous nation in Africa, with a population of about 173.6 million as at 2013, which accounts for 47 percent of Africa's total population, has a GDP of \$521.8 billion, and GDP growth of 5.4 percent (World Bank, 2014). Nigeria is the largest crude oil producer/exporter and largest gas reserves in Africa, which have potentially put Nigeria at an advantage in both human and natural resources to have a vibrant and functional economy which should have enhanced

poverty reduction, and provision of infrastructural facilities and social services to meet the yearnings of its people (World Bank, 2014). However, Nigeria's poverty rate has been rising over time from the all-time lowest 15 percent in 1960, 28.1 percent in 1980 to 46.3 percent in 1985. The poverty level galloped down to 42.7 percent in 1992 and by 1995 it jumped up to 43.6 percent and in 1996 it skyrocketed to 65 percent indicating some 67 million people in Nigeria are victims of poverty menace (Ugoh, & Ukpere, 2009), making meeting the livelihoods needs difficult if not impossible.

According to United Nations [UN] (2016) poverty has been increasing in Nigeria coupled with hunger in severe terms as indicated by the Global Hunger Index (GHI) of 32.8. Furthermore, Oxford Poverty and Human Development Initiative [OPHI] (2017) stated that, there is still extreme poverty in Nigeria with an intensity of 53.3 percent and multidimensional poverty index value of 0.548 indicating the severity of multidimensional poverty in Nigeria both on health, education and living standard dimensions and indicators. Accordingly, the menace of poverty in Nigeria today, cut-across urban and rural areas, with the high concentration of the poor in the rural areas with 53 percent of the rural dwellers living below the poverty line, while in the urban cities where underemployment and unemployment prevail 34 percent of its inhabitants live below poverty line (Leke *et al.*, 2014).

In a similar situation, Sokoto State was caught in the web of poverty incidence in Nigeria as indicated by Oxford Poverty and Human Development Initiative [OPHI] (2017) and (2015) to have high proportion of poverty and poor in Nigeria, with an MPI value of 0.548, and an incidence of 85.3 percent, intensity 64.2 percent, with 8.2 percent as vulnerable, and 66.4 percent found to be in severe poverty, while 66.8

percent as destitute and a gini-value of 0.298 representing inequality in Sokoto State. Similarly, the multidimensional poverty index (MPI) contributing indicators for the poverty incidence in Sokoto State (further explained the multidimensional nature of poverty in Sokoto State) based on 3 dimensions and 10 indicators developed by Oxford Poverty and Human Development Initiative (OPHI) for measuring multidimensional poverty, the multidimensional poverty index about Sokoto State was explained in such a way that so alarming. The study indicated that in terms of health (human asset) dimension Sokoto State has 63 percent in terms of malnutrition and 50 percent in terms of child mortality rate. Whilst with regards to education (human asset) dimension only 17 percent of children complete years of schooling, and school attendance rate by children at 30 percent. Similarly, on the living standard dimension (physical asset) 67 percent have no access to electricity, 73 percent with no access to good sanitation, while 83 percent lack good drinking water, and 87 percent have no floor in their homes, while 90 percent lack cooking fuel, and 97 percent lack assets (OPHI, 2015) which have shown that there is multidimensional poverty in Sokoto State.

Similarly, in a study by Anyebe (2014) the galloping nature of poverty in Sokoto State was shown in comparison with other States in Nigeria which further explained the perpetual nature of poverty incidence in Sokoto State. In 2004 Sokoto State had poverty incidence of 76.8 percent, and a total number of 2,843,655 million people as poor out of total population of 3,702,676, which was higher than other States from other geopolitical zones as shown in Table 1.1 below. Similarly, in 1980, 1985, 1992 and 1996, the Table 1.1 below shows Sokoto State with the highest incidence of poverty when compared with other States from different geopolitical zones. This indicated that Sokoto State has been plagued by the menace of poverty for quite some

time, which necessitates the need to conduct a study with a view to understanding why the scourge (poverty) has been manifesting itself in Sokoto State so as to proffer possible solution to it, Table 1.1 below indicates the surge of poverty in Sokoto State over time.

Table 1. 1

*Poverty Rate of Sokoto State compared to other States (1980-2004)*

States	1980/%	1985/%	1992/%	1996/%	Region	S/REG	2004%
Sokoto	25.4	45.8	37.9	83.6	N.W	SOK/NW	76.8
Bayelsa	7.2	44.4	43.4	43.4	S.S	BAY/SS	20.0
Enugu	12.8	37.7	32.3	51.0	S.E	ANAM/SE	20.1
Oyo	7.8	28.3	40.7	58.7	S.W	OYO/SW	24.1
Borno	23.6	50.1	49.7	66.9	N.E	BOR/NE	53.6
Benue	23.6	42.9	40.8	64.2	N.C	BEN/NC	53.3

Source: Anyebe (2014).

Similarly, in a survey by National Bureau of Statistics in 2010 on harmonized living standard survey (HLSS) Sokoto State was found to have high incidence of poverty which shows that, the rate of food poor was 56.6 percent, absolute poor 81.2 percent, relative poor 86.4 percent, and 81.9 percent poor as per 1 dollar a day, which has shown that there was high rate of poverty in Sokoto State. While with regards to subjective poverty measurement Sokoto State was found to have 31.9 percent core poor, 59.4 percent, moderate poor which in total amount to 91.3 percent, below the national poverty line of \$1/ day (Naira 150), whilst on the Household assessment of livelihoods (subjective poverty measurement) Sokoto was found by the survey to have 8.6 percent very poor, 23.3 percent poor, moderate poor 57.4 percent, while 7.5 percent and 1.1 percent were found to be fairly rich and rich respectively (NBS, 2012). Similarly, in terms of literacy rate Sokoto State had 29.7 percent for male and 14.0 percent for female in terms of literacy in English language which has total 22.1 percent rate for both sexes in literacy in english (which has effect on human asset), whilst concerning literacy in other languages Sokoto State has 87.6 percent male and 66.7 percent female,

this shows that Sokoto has high poverty in terms of some human asset elements, and 77.4 percent rate for literacy in any language (NBS, 2010).

Correspondingly, to MDGs performance tracking report (2015) Sokoto State had a lower percentage of primary school attendance ratio 24.8 percent compared to Anambra State, 94 percent, Delta State, 92 percent, Imo State 90 percent, Ondo State 92.4 percent, Edo State 91.6 percent, and Ekiti State 93.6 percent (NBS, 2015). Similarly, according to the federal ministry of education, Sokoto State ranks 13<sup>th</sup> by literacy rate and 9<sup>th</sup> with regard to poverty rate (NBS, 2012). Similarly, with regards to access to improved sanitation facility (physical asset) only 25 percent of Sokoto State's population has access to sanitary facility compared to Zamfara State 52 percent, Imo State 55 percent, Abia State 40 percent, Akwa Ibom State 44 percent and Anambra State has 45 percent, while in respect to improved drinking water (physical asset) only 41 percent of Sokoto State's population has access to good drinking water compared to Abia State 79 percent, Imo State 85 percent, Jigawa State 80 percent, Osun State 80 percent, Oyo State 77 percent, and Rivers 82 percent (NBS, 2015).

Another important issue that influences high poverty incidence in Sokoto State is the issue of energy/electricity supplies (physical asset) which contributes to socio-economic activities and in turn creates jobs and add value to livelihoods of the people Emodi and Boo (2015), as well as security and public health (Ramchandra & Boucar, 2011). In this regard Sokoto State has been found to have energy poverty with the below percentages. The Table 1.2 below expatiates on the energy poverty in Sokoto State.

Table 1. 2

*Level of Access to Different Sources of Electricity (Percent)*

Year	PHCN	Rural Elect.	Gent.	PHCN/Gent.	Rural Elec/Gent.	Solar System	Nil
2007	35.7	0.3	0.7	0.8	2.3	0	60.3
2008	29.8	0	0.2	0.3	0.2	0	69.3

Source: Emodi and Boo, (2015)

The above Table 1.2 provides an insight into energy-related poverty in Sokoto State which in turn affects access to the physical asset (electricity), and micro, small and medium enterprises (livelihood strategy) which could generate employment and help in reducing poverty, and accessibility to the financial asset (income, and cash flow).

Similarly, being agrarian society Sokoto State's poverty should have been reduced substantially, as more than 70 percent of its population are farmers both of subsistence and small scale commercial farming (Anyebe, 2015; Yahaya, 2002). Unfortunately, the agricultural sector (natural asset) has not bridged that gap in terms of reducing poverty. It has been argued by Auta and Dafwang (2010) that agricultural development programmes (ADPS) in Sokoto State have not yielded the result needed, which formed the basis for their establishment, as poor funding, lack of skilled extension workers and lack of motivation in the agricultural sector had affected output (agricultural produce yields), thus affecting food security and income earning (financial asset) of the teeming farmers/households which also increases the rate of poverty in the State. Additionally, apart from farming as source of income and livelihoods in Sokoto State, there are other economic activities (livelihood strategy) that should have contributed in reducing the menace of poverty through small and medium enterprises. Similarly, Abdullahi and Abdullahi (2013) argued that SMEs in Sokoto State have not aided in reducing the level of poverty in Sokoto State as the small and medium enterprises



(SMEs) are faced with inadequate capital, poor managerial and technical skills, inadequate energy/electricity supply, poor road network, lack of access to market (physical asset) and absence of subsidy from the part of the government (government intervention).

Basically, the point here is businesses, for instance, small-scale manufacturing like package water business that is common today, cold stores, petty trading, welding, leather works and a host of other small and medium scale businesses that could generate employment, and enhance income earning are facing problems, therefore, instead of reducing poverty it rather becomes compounded. In the same vein Abdulsalam and Tukur (2014) asserted that, main economic activities in Sokoto State include ownership of retail shops, street vending, blacksmithing, welding, carpentry and leather works, however they further posited that these activities could not help in reducing poverty in Sokoto State as they are fraught with challenges ranging from poor access to microcredit (financial asset), to interruptive supply of electricity (physical asset), and lack of government support and financing capital. Therefore, the daunting problems include poor access to loan (financial asset), poor market (physical asset), poor government support and ineffective government fiscal and monetary policies (government intervention) which hampered the functioning of the economic activities that otherwise could have generated employment and improve the economic base of the people. The failure of the SMEs which constitute economic activities in Sokoto had further contributed to the scourge of poverty in Sokoto State (Abdulsalam & Tukur, 2014; Yahaya, 2002).

Furthermore, on livelihood or coping strategy it has been asserted that significantly poverty incidence in Sokoto State relates to the issue of food insecurity which Shuaibu et al. (2015) espoused as an issues facing rural dwellers from flood affected areas in Sokoto State, thus necessitating them to employ a livelihood strategy which revolves around adjusting meals, patronizing substandard food, buying roadside food, and borrowing of food or money to buy food, and even spending a day without taking food at all (which has negative effect on human capital of the households and by implication affecting the overall livelihoods of the households) as mechanisms for absorbing threats to their sustenance. Food insecurity affects the quality of human asset thereby posing threat to households and individuals, thus compounding the menace of poverty. Closely related to that is also the issue of rural-urban movement in form of migration for greener opportunity to nearby cities to engage in labour work, commercial motorcycle riding, petty trading and taxi operation which has impact of the socio-economic spheres of households in Sokoto State, as the able-bodied men that should grow food for their households and Sokoto State have migrated creating deficit in human asset in terms of labor force for their immediate households, Sokoto State and Nigeria in general.

However, it is imperative to note that governments in Nigeria government had introduced different programs towards addressing poverty. Notable amongst them are the National Accelerated Food Production Program (NAFPP), Directorate for food roads and rural infrastructure (DFRRI), National Directorate of Employment (NDE), National Poverty Eradication Program (NAPEP) National Economic Empowerment and Development Strategy (NEEDS), Seven points Agenda and Transformation Agenda and co-founding of Millennium Development Goals (Oshewolo, 2010).

Notwithstanding the programs initiated by various administrations failed to address poverty in Nigeria, Sokoto State inclusive (Gyong, 2012, Garba, 2006). The failure of the poverty eradication/reduction programs was attributed to a range of problems which were premised as impediments to the success of poverty reduction in Sokoto State and Nigeria in general (Oshewolo, 2011).

Furthermore, it has been asserted that, largely, efforts at fighting or reducing poverty in Nigeria were faced with issues of policy inconsistency, misplacement of policy priorities, embezzlement, brazen (open) corruption, loose macroeconomic decisions, political deceit, lack of involvement of the beneficiaries in the management of the programs, abrupt change of government and political meddling (Garba, 2006). Similarly, the top-bottom manner with which poverty reduction efforts were and are being carried out in Nigeria has been responsible for their failure (Gyong, 2012). To sum up the crux of the matter, a lot of resources (funds) were committed, for instance Ogwumike (2002) posited that about ₦10 Billion about UDS \$100 million was expended unfortunately poverty has not been reduced, but increased over-time (Gyong, 2012).

Conclusively, the numerous issues raised in the above overview proved that, the incidence of poverty in Sokoto State is multifaceted and has defied efforts aimed at curtailing its menace, as such to understand and provide better spectrum for it explanation, the present study adopted sustainable livelihood approach to study the scourge of poverty in Sokoto State which aimed to provide a framework that would theoretically and empirically proffer a comprehensive approach to tackling poverty in Sokoto State and Nigeria in general.

### **1.3 Research Questions**

For the purpose of this study the following questions were asked.

1. Does the access to livelihood assets have an impact on sustainable poverty reduction?
2. Does the adoption of livelihood strategy have an impact on sustainable poverty reduction?
3. Does government intervention moderate on the relationship between livelihood assets and sustainable poverty reduction?
4. Does government intervention moderate on the relationship between livelihood strategy and sustainable poverty reduction?

### **1.4 Research Objectives**

Considering the problem statement and the research questions, the objectives of this study are:

1. To examine the impact of access to livelihood assets on sustainable poverty reduction.
2. To determine the impact of livelihoods strategy on sustainable poverty reduction.
3. To examine the moderating effect of government intervention on the relationship between access to livelihood assets and sustainable poverty reduction.
4. To examine the moderating effect of government intervention on the relationship between livelihood strategy and sustainable poverty reduction.

### **1.5 Scope of the Study**

The incidence of poverty within Sokoto State varies amongst local governments in the state which cut-across the three (3) senatorial districts, with Sokoto East senatorial

district consisting of eight (8) local governments, Sokoto central senatorial district having eight (8) local governments, while Sokoto South senatorial district has seven (7) Local governments (NPC, 2010). The area for this study/research Sokoto State has an estimated population of 4.3 million people (NPC, 2010). Sokoto State is a constituent element of the 36 States that formed the Nigerian federation. Sokoto State was formerly part of the North-Western State which was later disbanded and Sokoto State was created in 1976. Presently Sokoto State is one of the 7 States that constitute North-west geopolitical zone (Kaduna, Kano, Katsina, Jigawa, Zamfara, Sokoto and Kebbi states) and shares border with Niger Republic except Kaduna State. Sokoto State has its Capital and seat of power in the town of Sankwato (pre-colonial nomenclature) which is now referred to as Sokoto (colonial distorted nomenclature). Sokoto State is made up of 23 local governments (NPC, 2010).

Accordingly, Sokoto State is in the dry Sahel, surrounded by sandy savannah and isolated hills with an annual average temperature of 28.3 °C (82.9 °F), Sokoto State is, on the whole, a very hot area. However, maximum daytime temperatures are for most of the year generally under 40 °C. Over eighty 80% of the people in Sokoto practice agriculture as a source of livelihoods, and produce crops like millet, guinea corn, maize, rice, potatoes, cassava and onions (Anyebe, 2014).

Similarly, the present study intends to choose four (4) Local governments each, from the three (3) senatorial districts, with Goronyo, Wurno, Rabah and Gada Local governments from Sokoto East, while Tangaza, Gudu, Binji and Wamakko Local governments from Sokoto North and Yabo, Tureta, Bodinga and Tambuwal local Governments from Sokoto South. The choice of the Local governments was premised

on a study conducted which depicted these local governments as areas with high incidence of poverty in both normal and extreme poor senses with Goronyo (90.0 percent) poor and (65.0 percent) extreme poor; Wurno (72.5 percent) poor and (50.0 percent) extreme poor; Rabah (55 percent) poor and (47.5 percent) extreme poor; Gada (50.0 percent) poor and (17.5 percent) extreme poor; Tangaza (97.5 percent) poor and (92.5 percent) extreme poor; Gudu (75.0 percent) poor and (57.5 percent) extreme poor; Wamakko (71.2 percent) poor and (40.7 percent) extreme poor; Binji (59.1 percent) poor and (41.9 percent) extreme poor; Yabo (68.3 percent) poor and (43.8 percent) extreme poor; Tureta (60.0 percent) poor and (30.0 percent) extreme poor; Bodinga (57.1 percent) poor and (26.3 percent) extreme poor; and Tambuwal (54.8 percent) poor while (29.0 percent) extreme poor (Shamaki *et al.*, 2013a). Therefore, this study seeks to examine the factors behind the damning scourge of poverty in Sokoto and proffer what could be done to address the situation.

## 1.6 Theoretical Framework

Efforts at eradication or reduction poverty are issues that aim at securing livelihoods of those identified as poor and having problem with livelihoods outcome and livelihood assets, hence incapable of meeting their daily fundamental needs of subsistence (Krantz, 2001). It is on this premise that, this study employed sustainable livelihood approach (SLA) as the theory upon which the study based its analysis. SLA as a frame of analysis (theory) explains the relation between access to livelihood assets and structures/processes/institution (government intervention) and livelihood strategies through which poverty reduction on a sustainable basis could be achieved (Ashley & Carney 1999; Chambers & Conway, 1992). The essence of choosing SLA

as the guiding approach/theory for analysis by the study is because of its emphasis on the poor people as the concern of poverty reduction and development (Krantz, 2001).

According to Krantz (2001) sustainable livelihoods approach (SLA) recognizes the importance of poor's capability, multifaceted nature of poverty beyond income, health and illiteracy to understanding vulnerability and exclusion from participation and involvement of the poor in addressing their conditions, therefore SLA has the potency of being used as basis for the analysis in poverty studies especially livelihood assets based study of poverty. Similarly, Hoon, Singh, and Wanmali (1997) argued that unlike other theories of poverty that centered on an aspect of poverty the sustainable livelihood approach has at its core poverty reduction that ensures sustainability of livelihoods, socio-economic empowerment, participation and gender balance for households and individuals in the society. Furthermore, Morse and Namara (2013) asserted that, the sustainable livelihood approach emphasizes on the assessment of basic livelihood assets that enhance livelihoods of households, encourage participation, and sustainability of livelihoods, and therefore, see poverty as a function of insecure livelihoods, poor livelihood assets base and vulnerabilities from shocks, stresses, and seasonalities.

Accordingly, considering the above assertions and the multidimensional nature of deprivation (poverty) this study adopted sustainable livelihood approach as the underpinning theory for its analysis and investigation of the scourge of poverty in the study area (Sokoto State, Nigeria) with a view to providing possible comprehensive approach to poverty reduction in Sokoto State.

### **1.7 Significance of the Study/ Contributions**

The present research/study contributes in the following realms;

1. Theoretical
2. Practical
3. Methodological
4. Empirical

**Theoretical contribution:** The study is the first in the study area and amongst the very few to use sustainable livelihood approach (SLA) as the frame of analysis in the poverty studies, unlike previous studies that centered on income, food in-take, effect of natural disaster and climate change. Similarly, it is also the first in the study area to embark on livelihood assets-based analysis of poverty, and introduce livelihood strategy as an independent variable, as well as introduced a moderating variable, in particular, government intervention and its measurement.

**Practical/Managerial contribution:** The present study serves as a reference point to the policy-makers, development agencies and government toward comprehensive and effective poverty reduction policies. In particular, the study is useful to Sokoto State government and Nigerian federal government in understanding the reason why poverty persists in Sokoto State and Nigeria in general as well as policy instrument for proper policies and programs to be designed for poverty reduction purposes.

**Methodological contribution:** The present study is the first in the study area and amongst the very few studies to use second-generation statistical software PLS-SEM to establish both measurement and structural models in poverty related study. It is also



the first in the study area to use primary data to analyze the poverty incidence, unlike previous ones that used secondary data. Similarly, it is first to adopt Krejcie and Morgan's sample size determination and G\*Power 3 statistical tool to get the minimum sample size required for the analysis of the empirical data from the study area, and among the very few (if any) in livelihood and poverty studies.

**Empirical contribution:** This study is beneficial to the immediate community towards understanding their predicament, and enlightens them on the need to strive and access livelihood assets, understand the appropriate livelihood strategies they need to develop to get out of poverty. It would also benefit NGOs, development partners, and donor agencies with effective tools needed in curbing issues of livelihoods and poverty in the study area and beyond.

## **1.8 Operational Definitions**

### **Poverty/Deprivation**

In the context of the present study, poverty/deprivation entails a situation whereby an individual, households or group of people, lack income sufficient enough to meet his/her or their physiological need of food, shelter, clothing, and education (World Bank, 2011). Similarly, it denotes powerlessness or lack of participation and social exclusion, hunger and malnutrition, poor health status, lack of access to education, basic infrastructures, poor material health, high maternal and infant mortality, poor environment, lack of good drinking water, lack of income and productive resources, asset and capabilities (Sen, 1986; Omadjohwoefe, 2011). Poverty also means human deprivation, unemployment and underdevelopment, ill-being and cultural impediments that defy modernity, changes, and opportunities (Zulifqar, Fatima,

Chaudhry & Hadi, 2015). Therefore, in the present study conception of poverty is multidimensional involving both quantifiable and non-quantifiable aspect of it, lack of assets and capabilities and ill-being.

### **Poverty Line Index (PLI)**

The poverty line in the context of the present study represents a border-line, benchmark or a gauge used to separate between those (people or households) that are poor and those (people or households) which are not (Bourguignon, 2006). In essence, it is the determinant point used to indicate whose income fell short of the required level that is below the poverty line, thus, poor or vulnerable. PLI could be national or international. Thus, in the context of this study poverty line means a fixed income set aside by particular country as the minimum income needed to meet the basic needs of households per month or per day.

### **Poverty Measurement (PM)**

Depending on the content of what is defined as poverty or context, that is situation or circumstances, poverty measurement means in the present study, parameters used to make a judgment about what constitutes poverty or deprivation (Akindola, 2009). For instance, income, assets, capabilities, basic needs, multidimensional poverty index e.t.c.

### **Sustainable Poverty Reduction (SPR)**

In the present study, sustainable poverty reduction means, consistent and sustained access to livelihood assets by the poor, and empowerment of the poor through socio-economic and political inclusion of the poor in the designing and the implementation

of policies that affect them, as well as identification of intervention priorities, which in the final analysis would lead to improved income, health and capabilities, food security, well-being and access to basic livelihood assets that distance the poor (an individual or household) from poverty and vulnerability to it.

### **Livelihood Assets (LAs)**

Within the context of the present study, livelihood assets would assume resources, basic livelihood asset both tangible and intangible needed for the individual or household to access so as to make end meets and to secure livelihoods and stay out of poverty (Messer & Townsley, 2003). Therefore, livelihood assets in the context of the present study mean resources that households and individuals need to access or have access to which enable them to meet their livelihoods need on a sustained basis. In the context of this study, livelihood assets include human asset, social asset, physical asset, financial asset and natural asset.

### **Human Asset (HA)**

Human asset (HA) means a combination of productive skills that an individuals or households need to enhance their livelihood and make end meets. These productive resources mean skills, education, good health, knowledge (DFID, 1999). In this study, human asset assumes personal characteristics and traits that household heads or individual possesses that contribute to livelihood outcome which in turn helps in keeping away from poverty and vulnerability to it, which include education, experience, skills, good health and employability.

### **Financial Asset (FA)**

Financial asset denotes accessible stocks which include cash, deposits or liquid assets like jewelry or livestock and other sources of income flow like remittances, pension, off-farm earnings which enable individuals and households to meet their basic needs and even invest in other livelihood activities and as well acquire other assets to enhance their livelihood security (Bajwa, 2015). Financial asset in this context means a collection of financial sources ranging from salaries, liquid assets, farm and off-farm activities, livestock, pension and charity and other ways of cash flow that empower the households and individuals to meet livelihoods outcome and keep away from poverty and threat to it.

### **Social Asset (SA)**

Social asset means relations and connections in associational terms, that individuals or households engage in either at family, societal or community level, which empower or enrich them to enhance their livelihood via collective benefit (Messer & Townsley, 2003). Social asset is a social resource which enhances ties, build trust and connections through bonding, bridging, and linkages (Halpern, 2005). In the context of this study social asset involves nature and pattern of social relation and interactions within the society at the micro (family, peer group and community associations and cooperative societies) and the macro level (political parties, government institutions, non-governmental organization) which avail benefits to households and individuals in attaining their livelihoods.

### **Physical Asset (PA)**

Physical asset here denotes resources that are essential for livelihoods outcome, which may be move-able and non-moveable, that include, roads, telecommunication, closeness to market, means of transport, schools and healthcare facilities which are essential for sustainable livelihoods (Kataria, Curtiss & Balmann, 2015). Physical asset in this study symbolizes basic infrastructural facilities that are essential for livelihood attainment. These include access roads and means of transportation, electricity, pipe borne water, hospital and schools, market, good shelter and accessible telecommunication facilities as well as internet service.

### **Natural Asset (NA)**

Natural asset symbolizes natural resources endowment of the society, which include suitable land (fertile) for cultivation/agricultural purposes, water for both domestic use, fishing and irrigational activities as well as other forest resources, shrubs, sand for sell (Ellis, 2000; Carney, 1998). Natural asset in this study constitutes resources that individuals or households could impact on or exact their physical and mental capability to make livelihood secured and sustainable. These resources include land for cultivation which is of good soil quality, water resources for irrigation farming and fishing, mineral resources for commercial exploration (sand/clay, solid minerals etc), economic trees and grasses, shrubs and forest trees for commercial firewood.

### **Livelihood Strategy (LS)**

Livelihood strategy means a series of activities that households or individuals engage in to secure their livelihoods. This involves undertaking activities that provide income returns and empower or enhances households' capability to secure different assets that

are essential to households' livelihood sustenance as well meet their basic needs of livelihood (Su & Shang, 2012). Livelihood strategy in this study stands for ways through which household heads and individuals earn a living to meet their needs for food, clothes and other physiological needs that help in securing livelihoods.

### **Government Intervention (GI)**

Government intervention denote strategies, policies and programs designed or that are to be designed and implemented with a view to curb the menace of poverty in the society or empower the poor to overcome it, either at the level of the individual, household or community as a whole (Loewen, 2009). Government intervention in the context of this study opines the government support or involvement in terms of policy and programs, subsidy in agriculture and business, support in education, training and skills as well as the provision of infrastructure that impact positively on livelihoods of the households thus helping in the fight against poverty. It also depicts role of government in social protection, political participation and interpersonal social relations which all have an effect on the livelihoods of the households and individuals and to a larger extent poverty reduction.

### **1.9 Summary of Chapter**

The chapter presented a discourse on the background of the study, the problem that motivated the study (problem statement) where fundamental issues related to poverty in the study area were raised to provide justification for the study. Additionally, the chapter presented the research questions and objectives. Similarly, the chapter discussed the area and scope of the study, the significance or contributions of the study,

and lastly provided working/operational definitions of some basic concepts/variables in the study.



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## **CHAPTER TWO**

### **POVERTY AND LIVELIHOOD ASSETS**

#### **2.1 Introduction**

The purpose of the chapter is to review relevant and related literature concerning theoretical aspect. In the first place, the chapter reviews theoretical component which includes the notion of poverty, poverty line, theories of poverty, typologies of poverty and its measurements. Similarly, literature on sustainable livelihood building assets was reviewed as well as variables of the study, sustainable poverty reduction (SPR), livelihood assets (human, financial, social, physical and natural assets), livelihood strategy (LS), and government intervention (GI).

#### **2.2 Notion of Poverty**

The concept of poverty is vague, making attempt at defining it a great task if not impossible hence there is no universally acclaimed and accepted definition of the term (Njoku, 1997; Maxwell 1999; Ogwumike, 2001; Abubakar, 2002; Ajakaiye & Adeyeye, 2002). This led scholars to described poverty as an artificial term brought forward by scholars in the social sciences and humanitarian studies (Hartman, 1984). Notwithstanding the difficulty in its definition, scholars and students in economics, sociology and development studies had over the years unveiled their notions or conceptions and understanding of what poverty is all about, although with some contextual underpinnings, thus poverty becomes context and content specific.



Therefore, a precise connotation of poverty remains quite difficult as its nature and meaning have dynamic dimensions over the years which make poverty (deprivation) to be multifaceted phenomenon with effects on the economic, political, social and other spheres of life of an individual, household, and society (Rakodi & Lloyd-Jones, 2002). Similarly, when people's standard of living falls below the poverty line, that is, the amount of income (or consumption) needed to meet an acceptable level of nutrition and other necessities of everyday's life, they are therefore said to be poor (World Bank 1992).

Additionally, the multifaceted nature of poverty must be appreciated in the sense that, in fighting against it, a whole effort must be made to confront the hydra-like face it has to avoid tackling one side of it while others are neglected. In line with this, poverty has transcended beyond the border of economic deprivation or income limitation, but includes other things like lack of political empowerment and participation, lack of social status in the society, low esteem or lack of it, social exclusion, lack of skills, inability to access education, poor and deteriorating health condition, hunger and squalor, poor shelter, living in slums and degrading of one's language, tribe and tradition (Haralambus & Heaid, 1980; World Bank, 1990; Blackwood & Lynch, 1994; United Nations, 1995; Bhola, 2006; Ogunleye, 2006). It is imperative therefore to know that, this hydra like nature of poverty is making curbing it very difficult, and that any attempt to give meaning of what is it, is compounded by myriad of difficulties that is why conceptualization of the term poverty has dynamism within its fold.

Further to the above, poverty as condition entails a situation where people and households lack income or have insufficient income to meet their daily needs of food

requirement, health, education, shelter, clothing (World Bank, 2011), this has impliedly depicted the picture of poverty as inability to cater for oneself and his family as per essential requirements for existence, which results in living a life that is surrounded by needs, with inability to satisfy such needs. This condition becomes worsened when perpetually the condition did not change due to either shocks or stress and particularly if the cause of poverty is individual or culture centered. Poverty in this sense is all-encompassing affecting virtually every aspect of individual's life resulting into being in a miserable condition with full of threats to the persons involved. Related to that poverty means lack of participation and exclusion, lack of participation in decision-making and in civil, social and cultural life, hunger and malnutrition, ill health, limited or lack of access to education and other basic services, high rate of morbidity, infant and maternal mortality, homelessness and inadequate housing, poor drinking water, unsafe environments or living in slums, social discrimination and exclusion, lack of income and productive resources (Central Bank of Nigeria [CBN], 1999; Omadjohwoefe, 2011).

Accordingly, poverty is synonymous with a prevailing condition where people fall short of the required standard of living within a particular community resulting into a condition of not being able to appear in public without shame in terms of clothing, wellness and nutrition. Similarly, lack of assets and capabilities, for example, education and creativity, result in to poverty since the subject cannot participate in the society's affairs with dignity (Sen, 1987). It could also assume shortage or lack of basic resources, economic hardship, living in junky environment, environmental degradation, distortion in socio-political, economic and cultural spheres of one's life (Onibokun & Kumuyi, 1996) , and deprive those within its shackles the chance to

meet their physiological needs for survival and human rights. Furthermore, poverty has both physiological and social context, which have combined effects on the lives of its subject, while physiologically it limits or deny an individual the ability/capability to address his/her material and subsistence needs, resulting from lack of income with which to meet the material and existence needs, socially it degrade his/her status in the community, limit chances to participate in making decisions that affect the society in which he/she lives and low esteem or lack of it (Hazel & Haddad, 2001).

Poverty is more often than not, associated with economic deprivation. Individuals and households are believed to be poor when they do not have enough purchasing power. Economic inviability translates to the inability of individuals to meet the basic standard of consumption or human welfare (Wagle, 2002). Poverty is a deprivation of economic capability required for physiological needs of food, shelter, and clothing to secure physical well-being (Sarlo, 1996; Ross, Shillington & Lochhead, 1994). It is important to note that, of all the notions and conceptions of poverty proffered, none of the scholars point to the reason why people are poor, whether it is a function of the society, the social and political systems, demography or cultural setting. It could also be the resultant effect of one's action, attitude or behavior. A study conducted by Hunt (1996), Goldthorpe (2000) asserted that, in the United States individuals are responsible for their being poor, which is a product of their attitude and behavior. Poverty could also be a product of political setting, particularly where welfare policies are ineffective or virtually lacking, or where the nature of social relations and power relations are to the disadvantage of the poor, that is in decision making and means of production (Brady, Fullerton, & Moren, 2009). Likewise, poverty is also associated with limited wealth, chronic unemployment and underemployment, low income, lack

of food, and a chronic shortage of financial assets, violent circle, living in slums, and cultural practices that impede wellbeing and thwart opportunities (Zulifqar, Fatima, Chaudhry, & Hadi, 2015).

It is pertinent at this juncture to know that, there is no single definition of the term poverty, although scholars and students of economics, sociology, and development studies have made efforts towards that, but have not in any way provided a single definition of the term, though the efforts were not fruitless as broader picture of what poverty should be or constitute as a phenomenon has been brought to fore, that is to say poverty is a multidimensional that not only shortage or lack of income that matters but far from that to include, environment, political exclusion, poor drinking water, poor health, inaccessibility to education, skills and competence, shortfall in food and lack of decent shelter.

### **2.3 Poverty Line**

The notion or concept of poverty line like other concepts is problematic in the sense that it aims at drawing line or parameter to be used in identifying who is poor and who is not. It is a criterion used in determining which individual is poor or vulnerable and thus requires government assistance (Goedhart, Halberstdt, Kapteyn & Van Praag, 1977). There are several definitions of a poverty line which illustrate that poverty is not a natural condition which is objectively identifiable. Unlike most authors on the subject-matter Rowntree (1901), Orshansky (as cited in Goedhart *et al.*, 1977), took objective criteria for poverty analysis that see people themselves as the best judges of their own circumstances, for instance, a family is called poor when its after-tax income restricts consumption so severely that its members feel they cannot make ends meet

for the family. Income level is the family's borderline between feeling poor and non-poor the minimum-income needed for that family. It follows that the minimum income needed to make ends meet varies over families (Kafta, 2010). In line with the above Alam, Kabir and Motiur-Rahman (2017) argued that, instead of just adopting income-based poverty line, other types of poverty line need to be indicated as poverty does not mean lack of income, rather a multi-facets phenomenon. They pointed the other components of poverty line to include direct calorie intake (DCI), food energy intake (FEI), and cost of basic need (CBN), which further explained poverty line within the larger context of poverty, as mere income poverty line does not capture other aspects of poverty that are very central to poverty measurement. However, it is important to note that poverty line varies from country to country as each country should have its own parameters of calculating the poverty line. The PLI is used to identify people whose income level fell short of the benchmark as living below poverty line (Bourguignon, 2006).

Accordingly, to regularize the poverty line the World Bank in 2008 adopted US\$ 1.25 per day, using PPP (purchasing power parity) for the whole world as the measure of poverty line (Haughton & Khandker, 2009). Similarly, World Bank in October 2015, further came with a conceived harmonized poverty line of \$ US 1.90 per day known as international poverty line (IPL) meant to be used as the global indicator of poverty and those below the threshold are classified as poor (Lusting & Silber, 2016). However, the poverty line set by the World Bank has failed to recognize the variation and division that exist amongst individuals in terms of context (urban, rural) and content or quality of what they cherish for consumption as well as opportunity, for example, an individual in a developed country like the United State of America cannot

be compared with a person from a third world country using the same poverty line via PPP indicator. Poverty line means, subsistence minimum level of income agreed upon in terms of its worth (Suryanarayana, 2014). Therefore, it can be easily identified if an individual with some given income level is poor or not, if he is poor, it could also be understood to what extent his income fall short of the poverty line, hence deprived or poor.

Far from the above, in considering poverty line or threshold country peculiarity, economic position, per capita and other considerations need to be taken into account, as nations are not endowed equally as such instead of adopting a blanket poverty line (using World Bank's PPPI), nations should be allowed to look inwardly in designing their poverty lines (Kakwani, & Son, 2016). This position was supported by Klasen et al. (2016) who posited that there are issues related to the international income poverty line, which relates to peculiarity of economic situation of different countries of the world coupled with the dollarization of the poverty line among others which corresponds with (Chen & Ravallion, 2013). Additionally, Chen and Ravallion (2013) recommended the construction and adoption of a weakly sort of relative poverty line to reflect special circumstances in different countries of the world.

In consideration of the buttressed arguments the present study considers looking at some nationally adopted poverty lines in some countries with a view to seeing how relatively national poverty lines differ with the World Bank's 2015 international poverty line using purchasing power of US \$1.90 per day as the threshold for understanding the poor and non-poor. Table 2.1 below shows adopted national poverty lines in some countries against the international poverty line of US\$ 1.90 a day.

Table 2. 1

*National Poverty Line of Some Selected Countries (Nigeria and South Africa)*

Continent	Country	National Poverty Line	International Poverty Line	Remarks	Source
Africa	Nigeria	₦305/day	\$1.90/day	Below IPL	NBS (2012)
		₦9,150/month		Below IPL	
	S/Africa	FPL R335/m	\$ 1.90/day	Below IPL	Delany et al (2016)
		LBPL R501/m	\$ 1.90/day	Below IPL	"
		UBPL R779/m	\$ 1.90/day	Above IPL	"

Source: Simulation by Researcher

Note: Conversions were based on exchange rate as at 18/6/2017.

The Table 2.1 above summarized the national poverty lines of some selected countries so as to provide a comparative insight into the discourse on national poverty lines in comparison with the international poverty line charted by World Bank in 2015. It was argued by Chen and Ravallion (2013), Kakwani and Son (2016) that nation-states have peculiarities, different economic disposition, GDP, income per head and different exchange rate comparative advantage, therefore national poverty lines must be constructed to address the shortcomings of the international poverty line that is dollarized.

In Nigerian context \$1 USD = ₦305 (i.e., one US dollar is equal to Three hundred and five naira), while RM1 = ₦73.3 (conversion as at 18/6/17), therefore base on the above computation poverty line based on \$1 a day adopted by Nigeria an individual is expected to earn ₦305 to be on the track of not being classified as poor in Nigeria (NBS, 2012; Eseyin, Toluyemi, & Oni, 2016). Note that Nigeria's national poverty line computation is based on adoption of \$1 a day by Nigerian government and as at the time of this study amendment has not been affected. Similarly, the national poverty

line is far below the international poverty line of \$1.90/day therefore the Nigerian national poverty line is inadequate and short of international standard. Note conversion from Nigerian Naira to Malaysian ringgit was done on 18/06/2017.

In South Africa, the national poverty line is not a single one but rather categorized as food poverty line (FPL), lower bound poverty line (LBPL), and upper bound poverty line (UBPL) (Delany, Jehoma, & Lake, 2016). In South Africa USD \$1 = 13.35 SA Rand and SAR 1 = 0.07 USD, therefore base on the food poverty line (FPL) in South Africa for an individual to be away from being food poor he/she must earn per month SAR335 which equals USD\$25.13 per month to overcome food poverty, and an average of SAR 11.17 (USD 0.084 cent) a day to stay away from food poverty which equals USD \$0.084 cent a day which fell short of \$1.90 set as international poverty line (Delany *et al.*, 2016). On the lower bound poverty line (LBPL) South Africa set SAR501 per month as poverty line (mostly concerns low income earners), which equals USD \$37.60 per month to stay out of poverty, and SAR16.7 a day (USD\$1.25 a day), therefore in this classification an individual needs SAR16.7 to stay out of poverty, while with regards to upper bound poverty line (UBPL) SAR779 per month is set as the threshold to stay out of poverty, or SAR25.97 a day (\$1.95 a day) to be along the track of not being poor (Delany *et al.*, 2016).

Therefore, based on the above assertion, in the three classification of the poverty line only UBPL corresponds with the international poverty line of \$1.90 a day, while FPL and LBPL are not up to the IPL (\$1.90). However, it should be noted that, although FPL and LBPL are not up to IPL within the context of South Africa the fixed amounts may be enough for the individual to meet need of food requirement and other



essentials, therefore IPL should not be the answer but what the national poverty line can do in South Africa. Note all conversions were based on exchange rate as at 18/6/17.

The next comparison in Table 2.2 is for the American and Asian continents and in this study United States of America and Brazil were considered from the American continent while Malaysia and India were chosen from Asia by this study.



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Table 2. 2

*National Poverty Line of Some Selected Countries (USA, Brazil, Malaysia & India)*

Continent	Country	National Poverty Line	International Poverty Line	Remarks	Source
Americas	USA	USD \$21.70	\$1.90/day	Above International Poverty Line	Jollife & Prydz (2016)
	Brasil	Extrem Pov.Line \$2.5/day	\$1.90/day	Above International Poverty Line	Castañeda et al (2016)
		Moderate Pov. line \$5.3/day	\$1.90/day	Above International Poverty Line	"
				Above International Poverty Line	"
Asia	Malaysia	Urban Poor RM940/month	\$1.90/day	Above International Poverty Line	DOSM (2014)
		Urban Hardcore Poor RM580/m	\$1.90/day	Above International Poverty Line	"
		Rural Poor RM870/month	\$1.90/day	Above International Poverty Line	"
		Rural Hardcore Poor RM580/m	\$1.90/day	Above International Poverty Line	"
	Malaysia/Sarawak	Urban Poor RM1,040/month	\$1.90/day	Above International Poverty Line	DOSM (2014)
		Urban Hardcore Poor RM700/m	\$1.90/day	Above International Poverty Line	"
		Rural Poor RM920/month	\$1.90/day	Above International Poverty Line	"
		Rural Hardcore Poor RM610/m	\$1.90/day	Above International Poverty Line	"
	Malaysia/Sabah	Urban Poor RM1,160	\$1.90/day	Above International Poverty Line	DOSM (2014)
		Urban Hardcore Poor RM690/m	\$1.90/day	Above International Poverty Line	"
		Rural Poor RM1,180/month	\$1.90/day	Above International Poverty Line	"
		Rural Hardcore Poor RM760	\$1.90/day	Above International Poverty Line	"
	India	Urban Poverty Line R538.60/m	\$1.90/day	Below International Poverty Line	Roohbakhsh & Yadollah (2016)
		Rural Poverty Line R356.35/m	\$1.90/day	Below International Poverty Line	"

Source: Simulation by Researcher

Note all conversions were based on exchange rate as at 18/6/2017.

Table 2.2 above shows that in the United States of America the national poverty line in 2011 was set at USD\$21.70 as the national poverty line that every individual must strive to earn a day for him/her to be away from poverty (Jolliffe & Prydz, 2016). This is to say that economic performance and overall GDP of a country determines the per capita income of the people in a given country, thus the US national poverty line exceeded, by far, the international poverty line set by World Bank (\$1.90) for the rest of the world.

However, in the Brazilian context there are two (2) types of poverty line; extreme poverty line (EXPL) and moderate poverty line (MDPL), which were set as poverty lines; for extreme poverty, that a person with less than BRL7.88 (\$2.5 USD) per day is extremely poor, whilst in terms of the moderate poverty BRL16.70 (\$5.3 USD) a day is fixed as the national poverty line, and that people living below the benchmarks, but are above the EXPL are classified as moderate poor (Castañeda, Gasparini, Garriga, Lucchetti, & Valderrama, 2016). By and large, the Brazilian national poverty line is above the IPL benchmark of \$1.90.

In the Malaysian context the national poverty line is rather base on regions which includes Peninsular Malaysia, Sarawak, and Sabah according to income poverty line (DOSM, 2014). In the Malaysian context income poverty line, considerations for the region and residential location were given a priority as well as socio-economic status. In Malaysian peninsular income poverty line was categorized into 2 as city poor (Bandar Miskin) and rural poor (Luar Bandar miskin) and under each category income poverty was not a blanket one (not the same) rather there is a bench mark for poor and hardcore poor. In the peninsular Malaysia city poor (Bandar Miskin) poor are

identified as those people whose monthly income is below RM 940 (US \$218.63) per month which equals RM31.3 (US\$7.3) a day which is above internal poverty line of US \$1.90 which is just RM8.17 a day, while city hardcore poor (Miskin Tegar) are those people whose monthly income is below RM580 (US\$134.9) per month which translates to RM19.3 (US\$4.50) per day which is above international poverty line of US \$1.90 that is just at RM8.17 a day. While at the rural level for Peninsular Malaysia a rural poor (Luar Bandar Miskin) is identified when his or her income is less than RM870 (US \$202.3) per month which represents income of RM29 (US\$6.74) per day which is better than the international poverty line of US\$ 1.90 which just equals RM8.17 per day, while rural hardcore poor (Luar Bandar Miskin Tegar) having less than RM580 (US\$134.9) per month which stands at RM19.3 (US\$4.50) a day which is also above international poverty line of US \$1.90 that is just at RM8.17 a day.

In the Sarawak region also there exists 2 categories of poor with each having an extension just like in Peninsular Malaysia with urban poor (Bandar Miskin) as earning less than RM1,040 amounting to US\$241.80 per month which is equal to RM34.7 or US\$8.06 per day while urban hardcore poor (Bandar Miskin Tegar) are people whose monthly income is less than RM700 (US\$162.75) which accounts for RM23.33 or US\$5.42 a day which surpasses international poverty benchmark of US\$1.90 which translates to only RM8.17 a day. Furthermore in respect of rural poor (Luar Bandar Miskin) in Sarawak region are those people whose monthly income fall less of RM920 (US\$213.90) which means a daily income of RM30.67 or US\$7.13 which is far better than the international poverty line of US\$1.90 that is equivalent to RM8.17 only per day, while at rural level hardcore poor persons (Luar Bandar Miskin Tegar) are those whose monthly income is below RM610 (US\$141.83) which means a daily income of

RM20.33 or US\$4.73 per day which exceeds that of international poverty line of US\$1.90 which equals only RM8.17.

Similarly, in Sabah and Labuan the income poverty line is base on urban and rural demarcation with urban poor (Bandar Miskin) having a poverty line of RM1,160 (US\$269.70) a month meaning that those that cannot earn up to that are classified as poor signifying a daily income of RM38.67 or US\$8.99 per day which is above international poverty line of US\$1.90 which is just RM8.17 per day, while for urban hardcore poor (Bandar Miskin Tegar) are those that cannot earn up to RM690 equals to US\$160.43 per month which represents a daily income of RM23 or US\$5.38 per day which goes beyond international poverty line of US\$1.90 which equals RM8.17 per day. Similarly, at the rural level poor people are those that cannot earn RM1,180 (US\$274.35) per month indicating a daily income of RM39.33 or US\$9.14 which exceeds international benchmark of US\$1.90, and rural hardcore poor (Luar Bandar Miskin Tegar) are those whose income is not up to RM760 (US\$176.70) per month which stands at RM25.33 or US\$5.89 a day which is better than the international poverty line. Therefore, base on the above it is therefore worthy to note that income poverty lines in Malaysia for urban and rural poor and hardcore poor are better than the international income poverty bench mark. Note currency conversion was based on the exchange rate as at 18/6/2017.

Furthermore, in respect of India there are also two sets of national poverty line categorized as urban poverty line (UPL), and rural poverty line (RPL) so as to make it all embracing (Roohbakhsh, & Yadollahi, 2016). In this context, Indian national urban poverty line (UPL) depicts that people residing in the urban areas who cannot earn

INR538.60 per month (\$8.40 per month), or INR17.95 per day (\$0.28 per day) are seen as urban poor; while on rural poverty line (RPL) a person who lives below a monthly income of INR356.35 per month (\$5.55 per day), or INR11.90 a day (\$0.16 a day) is classified as poor in the rural context of India (Roohbakhsh, & Yadollahi, 2016). It can be seen that the Indian national poverty line is far below the international poverty of \$1.90 a day as set by the World Bank, therefore going by the IPL a lot of Indians will fall within the poverty scourge as national poverty line does not corresponds with the IPL (researcher's emphasis).

Table 2. 3

*National Poverty Line of Some Selected Countries (United Kingdom and Germany)*

Continent	Country	National Poverty Line	International Poverty Line	Remarks	Source
Europe	UK	£16.48 per day	\$1.90/day	Above Intern. Poverty Line	Jolliffe & Prydz (2016)
	Germany	€24.20 per day	\$1.90/day	Above Intern. Poverty Line	Jolliffe & Prydz (2016)

Source Simulation by Researcher

Note: Conversion was based on exchange rate as at 18/6/2017.

In the context of United Kingdom, the national poverty line is set at £16.48 per day which is equal to the US \$21.29 a day. The national poverty line in the UK is by far above the IPL set by the World Bank. This might be related to the economic viability of the UK in terms of GDP, per capita and good economic indicators (Jolliffe, & Prydz, 2016).

Germany has one national poverty line that explains who is poor and who is not, although the national currency is the German Deutsche mark (DEM), Euro(€) is what the government adopts vis-à-vis the DEM, therefore the study considers NPL in both Dollar, Euro, and Deutsche mark. The national poverty line in Germany was set at

€24.20 a day, which equals the US \$26.39 a day, and DEM47.32 a day, which by far is above the IPL of \$1.90 a day this might be related to the high GDP and good economic performance of the country (Jelliffe, & Prydz, 2016).

From the above comparative analysis of different national poverty lines and international poverty line it could be seen that, in some contexts the IPL is met and even above it (see DOSM, 2014, for Malaysia; Andrés Castañeda *et al.*, 2016, in Brazil; Jolliffe, & Prydz, 2016; Germany, USA, & Germany). Whilst in some countries the national poverty line is by far below \$1.90 set aside by World Bank in 2015 (see NBS, 2012; Esiyen *et al.*, 2016, Nigeria; Roohbakhsh, & Yadollahi, 2016, India; Delany *et al.*, 2016, South Africa).

Accordingly, base on the above it will be right to assert that, the international poverty line has not taken into consideration the economic capability and diversity of the countries in the World, that is to say countries are economically not the same, as strategically some countries have economic advantage over others as such economic strength and opportunities as well should be considered in the making of an international poverty line (Kakwani, & Son, 2016; Chen, & Ravallion, 2013).

## **2.4 Theories of poverty**

Virtually recent literature on poverty agreed that, differences exist about theories of poverty Bradshaw (2007), with acknowledgement of the basic categorization of the theories to suit context and content of a particular theorization concerning what poverty is all about (Schiller, 1989; Goldsmith & Blakely, 1992; Alock, 1993; Shaw, 1997; Jennings & Kushnick, 1999; Rodgers, 2000; Blank, 2003). Fundamentally,

scholars that are concerned about poverty studies have distinguished between theories, either on their conviction about the individual as the cause of poverty (conservative), or theories that put the blame on the broader social context (liberal or progressive).

Accordingly, proponents of individual's cause of poverty blame the subject of poverty for his condition and that, his condition can only change when the individual wakes up and change his status (Ryan as cited in Brdashaw, 2007). Similarly, to Schiller (1989) poverty grows out of defective dispositions and limited opportunity, while Jennings (1999) conceived it from a number of issues hinged on the dynamics of social relation, norms, belief system, and primordial inclination. Instead of putting the blame on the individual who is at the receiving end, blame should rather be on the dysfunctional economic, political, and social structures (Rank, 2004). Therefore, based on the above this study looks at the postulations of the different theories of poverty and how they explain the phenomenon of poverty within the context of an individual or society.

#### **2.4.1 Individual Deficiencies Theory**

This subdivision theory of poverty focuses on the individual as the unit of analysis that is the individual is seen as the responsible factor behind his/her being poor. The traditionalist scholars see an individual as the cause of his poverty status and that can only change or wither away when he imbibed the culture of hard work and do away with laziness. Not only that, poverty here is seen within the context of the absence of certain requisites or inbuilt characteristics like intelligence or cognitive abilities (Rainwater, 1970). Basically, this theory of poverty explains poverty within the context of an individual inability to strive for better well-being to provide for himself and his family food, clothes, shelter and other physiological needs. The assumption



here concurs with the postulation of the sustainable livelihood approach that emphasized that individuals and households need to devise a livelihood which entails capabilities and assets to secure their livelihoods outcome. Therefore, in the context of the theory individuals and households that are poor are so because they have failed to stand up, work hard and did not engage in income generation activities or means of livelihood as such they fell into poverty trap thus the status of being poor.

Consequent upon that, the theory posits that for the individual or poor household to exit poverty they have to work hard and engage in productive activities to earn income and meet livelihood needs. However, the theory failed to realize the social and economic inequality that exist in the society which shaped the social and economic relations to the means of production and society's resources that might have made the individual or household to be poor which by implication is the failure of the dysfunctional socio-political and economic institutions in the society (Beeghley, 2002).

#### **2.4.2 Cultural Theory of Poverty**

Unlike the individual theory, this theory conceived poverty from the context and content of culture, thus (Culture of Poverty). This theory is more often than not related to the individual theory of poverty. The major assumption of the theory is that poverty has a generational effect which allows for the transmission of poverty from one generation to another simply through inherited cultural practices, skills and belief system (Gramsci, 1971; Swidler, 1986; Jordan, 2004; Lewis as cited in Kurtz, 2014). Similarly, Ryan (as cited in Bradshaw, 2007) argued that, the cultural belief, norm and convention of some sort in a given society may condition the spread of poverty, since

the society might have resisted change that will wither away the old conventions, as such cannot shift ground and accept change and enjoy its benefits. Cultural poverty theory was built on the premise of the influence of culture in making an individual poor by way of upholding the conservative, traditional and obsolete beliefs which are adamant about change.

In this regard, Lamont and Small (2008, 2010) argued that, culture propels poverty in forms of segregation between classes of citizens which breeds issue of first class and second class citizens therefore policies tend to favor one aspect of the society over other, thus affecting their level of participation and inclusion in the political and economic realms of the society thereby limiting their opportunities for employment, part-time jobs etc. In a similar vein, Bryson (1996) argues that culture promotes poverty by way of classification and social stratification in the society as opportunities tend to be in favor of higher and middle classes to the disadvantage of the lower class which tends to be transmitted to the generations unborn thus it becomes cyclical. Furthermore, Noh and Kasper (2003) posited that race and ethnic background influence poverty by way of imposing superiority and inferiority between individuals in the society for instance in their study in United State they found that black African Americans and Latinos live in higher poverty than the white/America which has generational effect of transcending to the upcoming generations. This entails that blacks by the color of their skin have lower status in the society, therefore, are inferior to whites who thereby stands better opportunity over them in both socio-economic and political spheres, which has or results into spillover effect on their children and unborn generations.

What has become obvious from the overview on the cultural theory of poverty is that poverty in this context is influenced by lack of social asset on the part of individual or household in the society. The fabrics that could otherwise help in combating poverty are missing because of ethical, traditional and racial practices have denied the individual the opportunity to harness the bonding, bridges, and linkages provided by social relation in the society as such the possibilities of exiting poverty are limited and such could spill-over on other generations in the society. This theory of poverty is in line with assumption of sustainable livelihood approach which posits that individuals and households need to access social asset so as to secure their livelihood outcomes, therefore inability to access the social asset subjects the individual or household to poverty and vulnerability to it. Notwithstanding its contribution to the discourse on poverty, the theory failed to realize that culture, though an important element in the society, but not as critical as other factors as resources, assets, and processes that determine poverty and vulnerability.

#### **2.4.3 Structure Based Theory of Poverty.**

Different from the culture theory of poverty, the basic thrust of this theory is the conviction that, socio-economic systems are responsible for poverty in the society. The assumption blames capitalism for sowing the seed of poverty in the society. This has been supported by the position of Beeghley (2000) when he opines that, the condition brought by economic structure through capitalism subdued human effort, hard-work, and skills which make an individual or household to be resilient. To further buttress his argument, he asserted that millions of people were made to be poor by the socio-economic structures of the United State of America. In line with the same position other theorists in functional approach cast aspersions on socio-economic structures as

the cause of poverty through what is called social stratification which aims at the division of the society in form of strata (groups) base on caste, race, economic and social status which favor few people in the society to the disadvantage of others which implies socio-economic and political exclusion of the disadvantaged people in the society (Davis & Moore, 1945).

Fundamentally, the theory looks at the pattern of social relations to the productive force and means of production in the society in forms of creation and sharing of national wealth and opportunities in the society (Aminul Islam, 2005). This theory advanced the idea that poverty or poor people were made to be so because the existing socio-economic and political structures are biased against the poor and powerless as policies and decisions in the society do not include the disadvantaged people in society because of the elitist nature of both the superstructure (political system) and sub-structure (economic system), thus breeding inequality in the society which then results to poverty. The structural theory of poverty relates with sustainable livelihood approach (DFID, 2001), which is the theoretical paradigm adopted by this study, in terms of the role institution as mechanisms for policies and intervention in poverty reduction and development programmes play, therefore their efficiency and effectiveness in terms of the functions the system-mechanism performs which relates to poverty reduction and well-being in a particular society.

#### **2.4.4 Geography Based Theory of Poverty.**

Unlike the previous theories discussed, this theory of poverty has its basis on the conviction that geographical setup of a particular society contributes significantly to its incidence of poverty. In support of this position Acemoglu, Johnson and Robinson

(2002) argued that climate, geographical location, and ecology of a particular society affect the life of that society both in the socio-economic, technology and skills, employment opportunities and the general life of the people. In an effort to validate their argument, they posited that looking at the world map one can see in a clear way that geographical differences account for poverty because some regions are close to the equator, with very hot temperatures, torrential rain, more often than not, while diseases manifest in such societies (Acemoglu *et al.*, 2002). More so, the societies are mostly countries described as the South, less developing and third (3<sup>rd</sup>) world, with high population but limited economic resources and opportunities, since heavy rain coupled with other natural disasters have depleted the soil, therefore even agricultural production is affected which worsens the condition of the inhabitants of a geographical area according to (Myrdal as cited in Acemoglu *et al.*, 2002)

This theory of poverty share some trait with the sustainable livelihood approach which is the guiding approach to this study, in particular, geography-poverty theory and sustainable livelihood approach share the conviction that the poor are mostly locate in rural areas where basic infrastructural facilities are lacking, that is why the sustainable livelihood approach has central concern of the poor and emphasized on accessibility to physical asset and natural asset which are essential to the poor particularly the rural dwellers (DFID, 2001).

Consequently, Morrill and Wohlenberg as cited in Bradshaw (2007) criticized the theory of poverty is caused by geography as being the idea of capitalism which aimed at justifying its exploitation. Instead, there is almost a consensus that poverty is caused

by lack of resources both natural and otherwise, high population rate, and absence of opportunities, creativity, knowledge, and skills.

#### **2.4.5 Interdependence Theory of Poverty**

This theory about poverty was built on the premise that individuals and societies are inter-dependent on one another as such, poverty is a function of cumulative problems from both the society and the individual (Bradshaw, 2000), that problem of the society affects the individual, and that of the individual also affects the society. This cyclical postulation obviously, focuses on the community provided opportunities on one hand and inputs on the side of the individual as jointly reliant or interdependent. An uncertain economy conditioned individual's opportunity, resulting in lack of capabilities and resources to be a player in the economy. This has a resultant effect which outwits community's responsibility of meeting the needs of the individual and vice versa (Myrdal, 1957). Furthermore, the theory was further espoused by Sher (1977) in his book "Rural Education" where reciprocity was further buttressed, through analysis of the interdependence of education and employment opportunity from the side of the individual and the community respectively. The point worthy of note is that in an ideal situation the community needs to prepare the ground for the development of the individual, while the individual is supposed to repay by paying dues and taxes which would also affect the community.

In a similar vein, the cyclical effect could be understood from the angle of the community where non-availability of job forces movement the of people (migration) to places mostly urban centers in search for a greener pasture, involving the able-bodied people that could have stay and develop the community, closure of businesses,

poor internal revenue resources and hopelessness, resulting to poor and inefficient provision of social services. This affects the individual, in form of non-availability of employment opportunities, poor consumption, lack savings and inability to face health challenges as the basic income required for that is insufficient or generally lacking. The submission of this theory correlates with that of sustainable livelihood approach which assumes that sustenance and securing of individual's or household's livelihood is a function of the individual/household and the intervening structure or institution (Krantz, 2001, DFID, 2001).

The above theories discussed have basically contributed to the literature and discourse on poverty, particularly, in explaining the primary causes of poverty in the society, however Bradshaw (2007) argued that the contending theories of poverty cannot explain the real causes of poverty as individually the theories deal with specific issues that make people to be poor, therefore a more comprehensive and all-encompassing theory or paradigm that explains in details the causes of poverty and the measures that need to be taken to curb its menace in the society is needed, that is why this study, therefore, opted for the sustainable livelihood approach as the guiding theory and frame of analysis for the study.

## **2.5 Types of Poverty**

Theorization about poverty has led to the emergence of typologies in relation to poverty, although with some controversy. Fundamentally, poverty has been categorized into two;

1. Absolute Poverty
2. Relative Poverty

### **2.5.1 Absolute poverty**

Absolute poverty connotes a situation where one's subsistence is below a required minimum, in line with the socially acceptable standard of living (Mabughi & Selim, 2006). Similarly, a person is conceived to fall or be in absolute poverty level, when his/ her income or consumption income is short of the required minimum level to meet one's basic needs (World Bank, 2000). This phenomenon of poverty is characterized by challenges associated with malnutrition, illiteracy, squalor, hunger, living in slums, high infant mortality rate and low life expectancy, inability to appear in public without shame and shortfall in social status, which violates every sense of human decency (Sterba, 2005). Absolute poverty symbolizes a situation where people are facing difficulties with regards to the access to the basic requirement of life that are related to physiological needs that make their life worthy of living (Marx, Broussard, Hooper & Worster, 2011).

Basically, this type of poverty manifest itself in the 3<sup>rd</sup> world/ developing societies with a substantial percentage of the population having poor access or non-access to social amenities or infrastructures that relate to Medicare, functional education, accessibility to safe drinking water, income, capital assets, sanitation, latrines, skills, self-determination, political participation and choices. Generally, all socio-economic and human development indicators are negative (UNDP, 2005).

### **2.5.2 Relative Poverty**

Relative poverty, on the other hand is said to be at play when a household's living standard is short to meet the benchmark set aside as the decent or normal life in a particular society or cultural setup (Saunders & Tsumori, 2002). The major position of



this type of poverty is its emphasis on the standard of living concerning the poor in comparative terms with that of the other members of the society living side by side with them.

This type of poverty, should be noted, provides an opportunity for poverty study on a contextual basis in the sense that, poor households in the developed society may not be same with the poor household in developing society. Townsend (1979) opined that, households, individuals or groups are said to be subjects of poverty when apparently they lack resources needed to meet required food needs, ability to partake in community's processes both in socio-economic and political context, and cannot conform with basic requirement for good life as conceived or prescribed by a particular norms, values and conventions in a particular society of which they are members.

## **2.6 Poverty Measurement Approaches**

The concept of measurement in relation to poverty connotes basic assumptions, yardsticks, frameworks or standards with which poverty could be identified (Akindola, 2009; Hagenaars & De Vos, 1988). This has become necessary owing to the fact that, there is contestation as to what constitutes poverty and the state of being poor in the literature of poverty. Poverty could be measured using varieties of indicators, depending on the context from which one is looking at poverty or deprivation.

### **2.6.1 Income/consumption Measurement Approach**

This approach measures poverty from purely income/consumption perspective where a particular income level has been prescribed as the requirement for an individual or household to meet up with the basic needs of food requirement for existence

(Barrington, 1997). This income-based/consumption poverty measurement uses what has been termed as poverty line to identify who is poor and who is not poor. In this sense a household or person whose income is up to what has been formally declared as the accepted level of income is classified as non-poor, while an individual or household whose level of income fell short of what has been formally identified as the benchmark or poverty line is here regarded as poor household or individual (Amaghionveodiwe & Osinubi, 2004). This dimension of measuring poverty is believed to have shortcoming as nations are not economically equal and as such their citizens cannot, in an ideal sense, be subjected to a common poverty line. Although the income-based measurement of poverty seeks to identify who is poor and who is not, using poverty line construct, the aim would be to assess, compare or study varieties of economic welfare of different societies using a standard international poverty line (USD \$1.90) with recognition of the basic fact that societies are not on the same footing economically, therefore, the World Bank, put poverty line concerning the 3<sup>rd</sup> world/developing societies at US\$1 a day (Pritchett, 2006), thus making it the accepted level of income to be used in identifying who is poor and who is not.

Notwithstanding its contribution to the study of poverty, the income/consumption based criterion for identification of the poor faced several criticisms labeled against it. Critical to it was Sen (1986) who held that, the income measure of poverty/poor could not ascertain in concrete terms, the magnitude of income shortfall about the poor and that it has also failed to recognize the politics of income distribution among the people in a particular society, which might play a significant role in putting the poor in that condition of shortfall. Similarly, the income/consumption measurement of poverty has not deployed a tangible ground to base its argument about the poverty line, since its

construction of poverty line has not incorporated other essential elements that are very fundamental to the physiological existence of the human kind (Edward, 2006).

### **2.6.2 Basic Needs Measurement Approach**

To further address the inconsistencies of income/consumption approach, the basic needs (BN) approach to poverty measurement emerged as a response to the failure of the income/consumption approach to the measurement of poverty. The approach owed its rise and origin to the 1970's and particularly with the work Abraham Maslow, whose approach measures poverty from the basic needs perspective, unlike the income/consumption approach, to include things like years of schooling (Wisor, 2012). Basic needs approach gained prominence with the famous work of Maslow in which physiological needs were identified as the units of measurement in the study and analysis of poverty and not mere income or monetary value of consumption. To Maslow, human beings have certain fundamental needs which must be met for them to live a good life as such measurement of poverty should be based on those needs that he classified as deficiency needs, which are fundamental to the human person.

These are needs that range between to be free from hunger, of good health, free from thirst, to that of security from threats to life, social inclusion, ability to participate and to that of equality in terms of opportunities in the society. These set of needs should be at the core of any realistic measurement of poverty in the society (Maslow, 1943). Arguably, the basic tenet of this approach is that understanding deprivation must encompass studying the ability or otherwise of an individual or group of individuals or households to meet these fundamental needs, for decent human life cannot stand without the physiological needs.

However, to debunk the thesis of income/consumption measurement, Streeten (1981) argued that poverty ought to be seen in form of deficiency that involves malnutrition, poor health status, illiteracy (lack of education), poor drinking water, dirty and junky environment. In addition, measurement of poverty in terms of basic needs was further supported by (Streeten & Burki, 1978) with regard to the broader conception of basic needs to include other needs that go beyond physiological needs of food and health to employability, and dignity. Far from that basic needs include material and non-material needs for instance political liberty and other forms of fundamental human rights (Steward, 1985). Precisely, the position of the basic needs approach to poverty measurement is that, income/consumption approach is not enough to be used as the yardstick for the study of poverty in both quantitative and qualitative terms as income earning ability alone cannot justify whether one is poor or not because to be poor does not only means lack of income, far from that there are myriad of issue (as buttressed above) that surpassed income in poverty measurement.

Notwithstanding its contribution to poverty measurement, basic needs approach was criticized for neglecting the poor and the freedom of choice by bringing forward what it termed as basic needs. The point here is that poor people were not carried along in choosing what is of basic importance to them as poverty is the subject of the mind and that it is only a person stricken by poverty that can tell what exactly is the problem is and its effect (Wisor, 2012). Similarly, Chambers (1997) criticized basic needs approach (BNA) as a postulation that lacks commitment to the study and measurement of poverty as it has failed to acknowledge the politics and dynamics of deprivation as the social system does not operate in a vacuum, that is to say, there are other factors

that dictate and give direction to socio-economic relations in the society, therefore poverty may be brought by lack of certain capabilities and inequality which need to be defined or measured.

### **2.6.3 Capabilities Poverty Measurement Approach**

The evolution of the capability approach could be owed to the work (Equality of what?) of Indian scholar and economist Amartya Sen in 1979 and subsequently gained ground in 1990's as it became an approach embraced by international organizations like the United Nations and other development projecting institutions and the academia. It became more popularized in the academia and particularly in economics, development studies and philosophy (Wisor, 2012). Similarly, the capability approach to poverty measurement was built on the premise that deprivation should be understood from the perspective of one's capabilities to live a kind of life he or she envisaged as perfect, therefore poverty or deprivation ought to be measured within the confines of whether one has capabilities or not (Sen, 1999), as lack in terms of capabilities is what leads to poverty. To Sen (1993) basic capabilities denote the ability to fulfill to the utmost efficiency, at least to the desired level.

Capability approach got a boost with the work of Martha Nussbaum (Women and Human Development) where she expanded the capabilities beyond what Sen (1993) identified. Nussbaum (2000) espoused a set of issues identified as capabilities which basically to her understanding are critical to human beings as such must be the parameters for the study and measurement of poverty, therefore in understanding deprivation capabilities should be the units of analysis. These capabilities include life, bodily health, bodily integrity, sense, imagination and thought, emotions, practical

reason, affiliation and control of one's environment. Additionally, other important capabilities like capability to stay alive, ability to live a healthy life, the capability to ensure reproduction, the capability for knowledge and freedom of expression and capability for social interaction were included as part of capabilities that should form the basis for the measurement of deprivation, Desai (as cited in Steward, Saith, Franco & Harris-white, 2007, p.62). Despite being an advocate of the capability approach, Sen (1999) pointed out that not all capabilities are important and central to the measurement of poverty, as choice of its value rest with the people, so the deprivation of some fundamental capabilities should only be the concern of the capability approach and in particular poverty measurement.

Despite its contribution to the study of poverty generally, shortcomings were identified within the fold of the capability approach amongst which are its failure to recognize the people as the unit of analysis and refusing to allow for a candid and inward choice of what is of value and what is not from the individuals involved and that instruments like human development index (HDI), and human poverty index (HPI) amongst others were properly branded as measures of poverty (Wisor, 2012).

#### **2.6.4 Multidimensional Poverty Index Approach**

Unlike other approaches to poverty, the multidimensional poverty approach is an index of critical multidimensional poverty measurement which reveals deprivations in the basic factors for human existence. It brought to fore the thesis that there are different forms of poverty than income poverty, as it illuminates a different set of deprivations. The multidimensional poverty index approach embodies three (3) main facets to be considered in the study and analysis of poverty which centered on health, education,

and standard of living which are to be studied or measured through 10 parameters with poor households as units of analysis (Alkire & Foster 2007, 2009). This aspect of poverty measurement is a departure from the tradition of mere adoption of a particular level of income as the yardstick for identification of poverty and the poor in the society.

Furthermore, the basic tenet of this measurement of poverty is that, to be poor it does not only entail lack of income or inability to earn a particular amount of money, far from that, poverty is an embodiment of some deprivations to which income or economic sense of it is just one aspect, although important, there are other important elements like health, education, security, participation, good drinking water (Sen, 1999; Alkire & Foster, 2009, Alkire & Santos, 2010). The argument of this approach to poverty measurement is that poverty is a multidimensional phenomenon which not only hinge on income (though important) but other issues like illiteracy, poor health, socio-political exclusion, lack of participation and lack of capabilities (Robb, 2000; Diaz, 2003). Although the multidimensional poverty index approach has contributed significantly to the study and analysis of poverty it could not absolve itself from criticism as it was attacked for using households as unit of poverty measurement and analysis instead of the country, and that data from individual household stand the risk of not being capable for generalization (Wisor, 2012). What has become obvious from the foregone discussion is that poverty is a phenomenon that entails deprivation in many respects being economic or social and that any attempt at its study, its definition and measurement should take into cognizance its complexity, so as to avoid a lopsided picture of what poverty (deprivation) is all about.

## **2.7 Sustainable Livelihoods**

The idea of sustainable livelihood (SL) emanated in the report of the advisory panel of the World Commission on Environment and Development (WCED). In an attempt to search for a better way of examining development, the advisory panel suggested the idea of sustainable livelihood security which is an all-encompassing concept that virtually touches every facet of human prosperity and made it prominent in its report. This has resulted in conceiving the concept of livelihood as adequate stocks and flows of food and cash to meet basic needs. Security means to secure ownership of, or access to resources and income earning activities, including reserves and assets to offset risk, and ease the shock. While sustainable refers to the maintenance or enhancement of resource productivity on long term basis. A household may be able to gain sustainable livelihood security in many ways, through ownership of land, livestock or trees, right to grazing, fishing, hunting or gathering; through stable employment with adequate remuneration, or through varied repertoires of activities (WCED, 1987).

The idea of sustainable livelihoods security was conceived by the advisory panel as a general term that entails the importance of secured livelihood as the requisite for the existence of human race and proper management of the environment as buttressed in the concept. What has been envisaged in the idea of the sustainable livelihood security is the need for the households to acquire necessary assets that protect them from shocks and stresses in the times of emergency on a sustainable basis, without harming the environment and threatening the future generation. The possibility of achieving that rest with the efficiency of the households and the level of access they have towards livelihood assets, resources or capital. In their effort to popularize sustainable



livelihood Chambers and Conway (1991, p.6), adapted the initial meaning of sustainable livelihood, as posited by the advisory panel to mean [sic]...,

a livelihood comprises of capabilities and assets (stores, resources, claims and access and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the future generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long terms.

Chambers and Conway's meaning of sustainable livelihoods revolves around the household or individual capability to acquire basic assets or capitals required to actively engage in the process of building assets block so as to cater for the household needs or individual's need on sustained basis, which enables the households and individuals to prepare and absorb stress or shocks while attaining livelihoods without compromising or posing a threat to the future generation, and preservation of the environment. Livelihoods theorization aims at bringing the clear picture of a variety of deprivations that households face (Rakodi & Lloyd-Jones, 2002). Livelihood assets poverty is seen as lack of basic assets (Newton, 2007). Livelihood to Moser (1998) entails a set of capabilities, resources and processes or engagements which are essential and basic to the earning of livelihoods. Similarly, livelihood has been viewed as abilities, resources (material and social) and processes needed to secure earnings, which ensure survival opportunities to overcome stress and shock, and preserve, promote skills and assets without compromising or destroying the natural capital base of the society (Scoones, 1998).

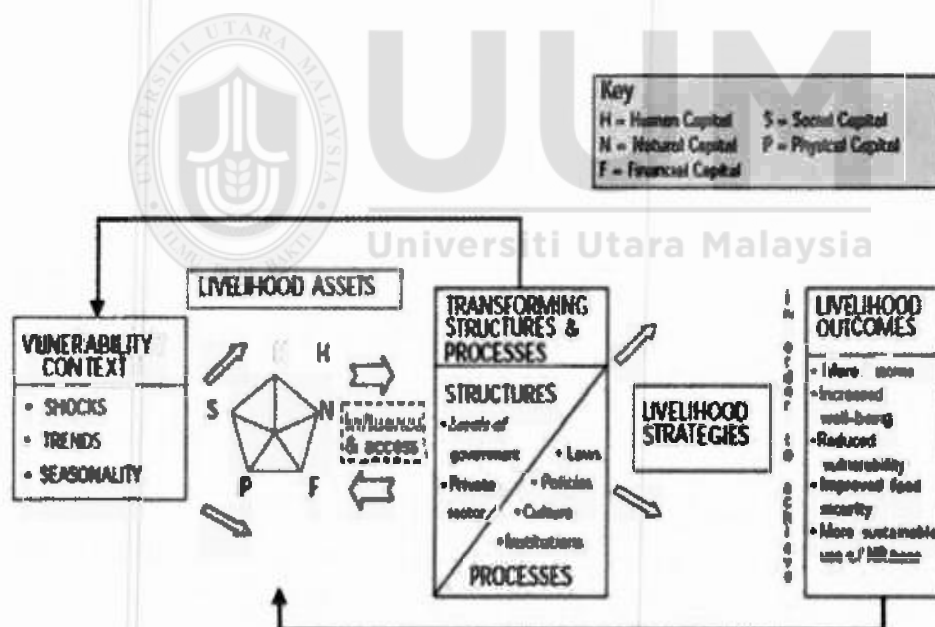
The concept of sustainable livelihood generally focuses on, the attempt, to transcend traditional notion and methods of poverty reduction, as the old methods were found to be not enough in explaining what poverty reduction ought to be, since the focus of the

old tradition of poverty reduction and measurement rest only on income, neglecting some fundamental concerns that explain further the extent and multidimensionality of deprivation (poverty). Sustainable livelihood approach presents a platform through which poverty reduction could be understood because it provides ample opportunity for the understanding of what poverty is all about by incorporating other concerns within the context of poverty like vulnerability and social exclusion. This new perspective to the understanding of poverty explains the importance to looking beyond income so as to have a comprehensive focus on other factors and processes or activities that hinder or make the poverty-stricken people's capability to earn a living in an ecologically, economically and socially but sustainable manner (Krantz, 2001).

Accordingly, livelihood concept is applicable in so many fields in the study of development, poverty or deprivation at community, individual and household level, but that it is used commonly at the household level, but it must be understood that even at the level of household, individual, society or family there exists disparities in well-being and access to assets (Krantz, 2001). There are various elements that constitute a livelihood, and the most complicated is the collection of resources upon which people build their means of living. The collection of resources consist of tangible assets such as stores, food stocks, stores of value such as gold and resources like land, water, livestock as well as intangible assets such as claims like demand and request for support. On the other hand, it involves access, that is, the opportunity to utilize the resources, enjoy services and unlimited information, unhindered access to technology, employment opportunity, nutrition or income.

Similarly, there is difference within the context of environmental sustainability and social sustainability, with environmental sustainability referring to outside effects of

livelihood on other livelihoods, that is to say influence it has upon indigenous and global resources and other assets, while social sustainability involves the internal ability of a livelihood to resist pressure and cope with stress and shocks with the potential to maintain its ability to survive and enhance over time. Stresses denote disturbances which usually are incessant and increasing, which can therefore be predicted, these involve seasonal shortages, population growth, inadequate resources, whereas shocks mean effects that could be characterized as unexpected, unpredictable and catastrophes, for instance, wildfires, earthquake, mudslide, floods, storms and diseases. The Figure 2.1 below illustrates the sustainable livelihood framework.



**Figure 2.1** A diagram illustration of Sustainable Livelihood framework  
Source: DFID (2000)

The above framework provides the means for the analysis of the livelihoods in such a way that, it explains the sequential processes and activities that are required or involved for better poverty eradication.

Accordingly, researchers have developed various indicators towards assessing the livelihood of the poor, for instance (Lindenberg, 2002; Rahman, & Akter, 2010), developed a comprehensive livelihood security index. Livelihood security index is a summation of essential social indicators or parameters for evaluating standard and quality of life and the basic needs assessment of the people. The fundamental objective of the index is to measure progress at the household, individual and community level, through proper identification of the problems and nature of deprivation facing the people which are hindering standard of living, their assets, strategies, and opportunities. Similarly, Rai, Sharma, Prachi, and Maltoha (2008) advanced an index which provides a measure for understanding the concept of sustainable livelihood, referred to as livelihoods index which is basically a multipart or integrated livelihood index developed based on macro level data to evaluate the developmental process of a country.

The above discussion explained the concept of sustainable livelihood within the context of analysis frame that uses multidimensional elements in studying what constitutes deprivation to a household or individual in the society.

## **2.8 Livelihoods Building Assets for Sustainable Poverty Reduction**

Deficiency of assets (resources) has become a key issue in the study and analysis of poverty at household, individual and societal level and therefore the building up of assets, and access to it, concerning poor people, has become a pivotal issue of intervention programs by State actors, NGOs, development partners and international donors. This has gained more ground from research activities of United Kingdom's

Department of International Development through what is referred to as Sustainable Livelihoods Framework (DFID, 2000), with the emphasis largely on livelihood assets.

Accordingly, there were intervention programs which centered on asset or asset-oriented interventions within the South Asian countries for instance, forest management programs (Natural asset) in Pakistan; infrastructural activities with focus on health and education (human asset) in Pakistan and Nepal, land reform (natural asset) in Nepal; and Agricultural extension schemes (natural asset) in India (Adato & Meinzen-Dick, 2002). Notwithstanding the intention of the programs toward intensifying the need for assets based empowerment of the poor, the programs were faced with challenges, as problems associated with accessibility were observed, this explained further that assets based empowerment programs are one thing, while accessibility is another thing.

Arguments concerning multi-facet nature of poverty include the livelihoods framework and empowerment approaches with an emphasis towards improving socio-economic dimension of livelihoods, using capacity enhancement and safeguarding social protection (Moser & Dani, 2008). Varieties of assets/capitals are used by households to cope with vulnerability, which is typically explained through exposure to the negative impact of seasonality, shocks, trends, and changes (Bebbington 1999; Ellis 2000; Murray 2001; Narayan, Patel, Schafft, Rademacher, & Koch-Schulte, 2000).

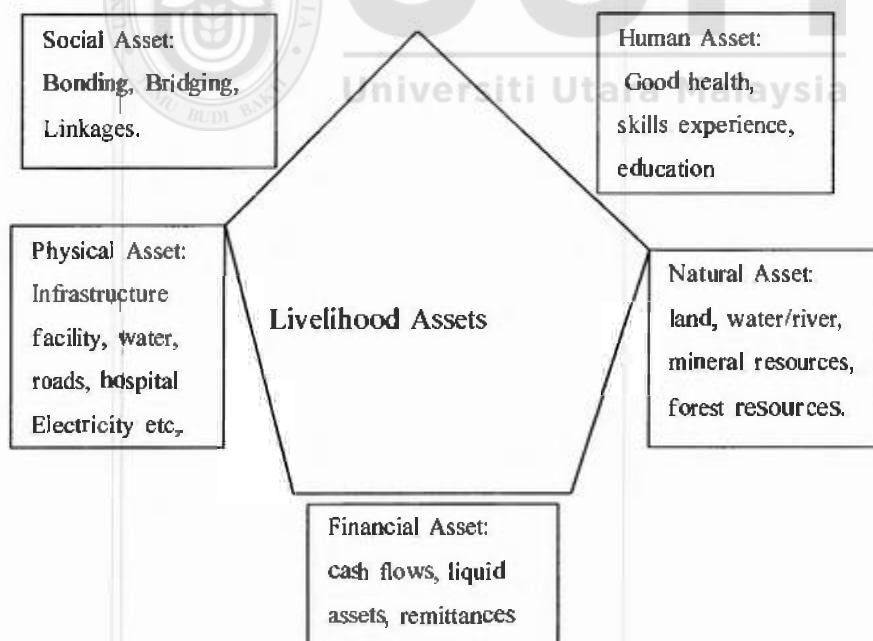
In line with the above concerns about assets and access to them, it was argued further that employing political and psychological assets, would lead to empowerment (Alsop

& Heinsohn, 2005). However, criticisms were labeled against asset approach, for instance social asset as per its role in livelihood (Carroll & Stanfield 2003; Dolfma & Dannreuther 2003). Researchers in the field of deprivation (poverty) and development studies deployed a range or different collection of assets that households need to employ through strategies, for income generation and coping with vulnerability. Furthermore, the Sustainable Livelihoods (SL) conceptual framework of analyzing livelihood, its assets, access and strategy within vulnerability context, has been recognized as the veritable instrument for the conceptualization of rural people's livelihoods, and was embraced by development partners, for instance, DFID through most of its development activities. At the core of the SL is livelihood assets (natural, physical, human, financial and social) which households must access, conquer and utilize, through the adoption of livelihood strategies, which in turn provide the basis for sustainable livelihoods (Carney, 1998).

However, household members combine their capabilities, skills, and knowledge with various assets available to them and engage in activities that provide means of livelihood to them and their entire households, while activities towards crafting the livelihoods are assumed to be livelihood strategies. The unevenness in access to different assets among households determines diverse levels of accessibility to the range of assets. The inequality and amount of these different assets available to the households will influence what type of livelihood they would build to themselves in a given time (Messer & Townsley, 2003). The household assets are assumed to be in form of a pentagon which may either be comparatively large, harmonized and steady, signifying a strong asset base, or small and unorganized, either because of limited access to assets or only a few assets are available to the households. In addition,

livelihood assets pentagon provides an important idea towards understanding household livelihood analysis, as it inspires researcher to put into consideration all types of assets and resources that may influence household livelihoods, although researchers before emphasized much on physical asset, financial asset, and human asset, giving little attention to the importance of natural asset and social asset as vital assets to household livelihoods (Messer & Townsley, 2003).

The livelihood assets pentagon Figure 2.2 below can help researchers, practitioners and students of livelihood studies to have a clear picture of connectivity between livelihood assets as the shape of the Pentagon explains the availability, level of access and type of assets at the disposal of the households or individuals in the society.



**Figure 2.2 Livelihood Assets Pentagon**  
Adapted: Messer & Townsley (2003)

At this point, it is important to know that, the present study intends to look at different types of assets and basically (human asset, financial asset, social asset, physical asset and natural asset). The study will look at the meaning of each asset, its features before embarking on the analysis of how access to the assets could influence livelihoods of households and enhance poverty reduction in the later part of the study. The succeeding part of this chapter deals with variables of the study independent variables (IVs), dependent variable (DV) and moderating variable.

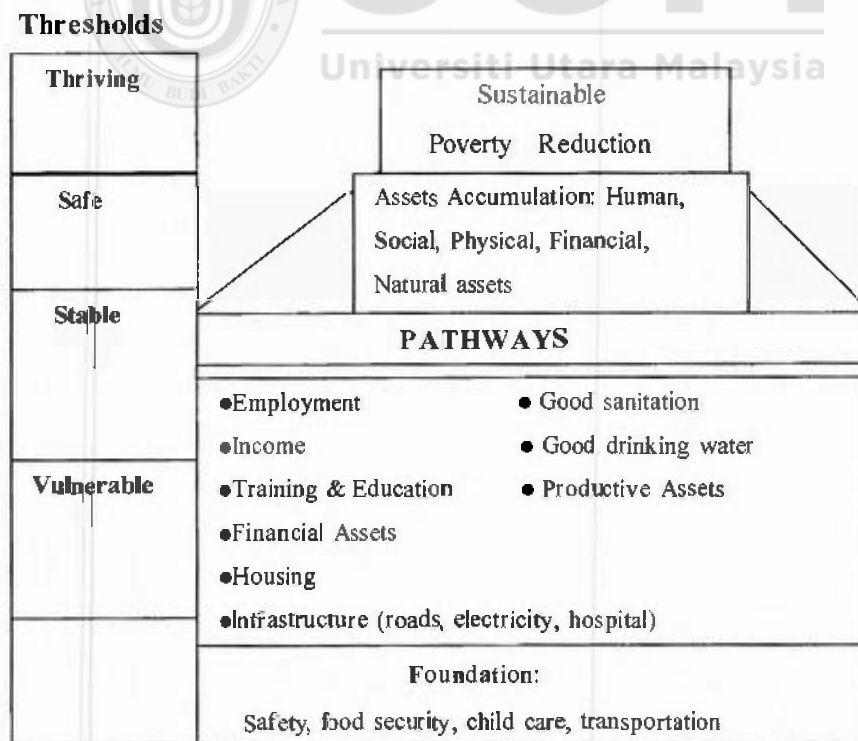
## **2.9 Sustainable poverty Reduction (SPR)**

Poverty reduction has no precise definition and lacks consensus as to what exactly it is, that is to say it involves different things, as poverty itself is has typologies. This has made it difficult to use the rule of “one size fits all” that is to say one strategy or program cannot fit all circumstances as poverty is multidimensional in terms of context, content, people, and places. Notwithstanding the difficulty, poverty reduction symbolizes redistribution of income, addressing public good and socio-political reforms and development on a sustainable basis (Barder, 2009).

Accordingly, poverty reduction denotes changes via policy interventions so as to change socio- cultural and economic conditions that produced poverty initially, enhances gender equality and the empowerment of women, democratic principles, and good governance, addressing climate challenges, and averting diseases. These made poverty reduction activity broad and more encompassing approach with the goal of attaining well-being on a sustainable basis (UNDP, 2013, Khan, & Shamsul Arefin, 2013).



In determining the success of poverty reduction, approaches adopted provide the parameters or indicators that constitute what progress is towards walking out of poverty, for instance if income approach was adopted progress would be measured when poverty depth in the society is reduced and significantly people exceed the minimum required income level or when asset/capability approach is adopted the goal of poverty reduction would be measured through level of livelihood assets (human, physical, social, financial etc.) accumulated or capabilities gained by households or individuals (Loewen, 2009). These conceptions of poverty reduction depict sustainable poverty reduction as a comprehensive process aimed at improving the lots of the poor or the deprived. The framework, Figure 2.3 below describes the process of attaining sustainable poverty reduction in a series of stages or processes.



**Figure: 2.3 Sustainable Poverty Reduction**  
Adapted: Loewen (2009)

Therefore, in the context of the present study, sustainable poverty reduction means a consistent access to livelihood assets that empower households and individuals to overcome poverty in a continuous but harmonious basis which results into increased income, improved food security, gainful employment, well-being, improved material health, and education.

## **2.10 Livelihood Assets**

- i. Human Asset
- ii. Financial Asset
- iii. Social Asset
- iv. Physical Asset
- v. Natural Asset

### **2.10.1 Human Asset (HA)**

Basically, human asset entails a collection of productive skills symbolized in a person which can be deployed to generate a means of income in the labor market to enable household's consumption in form of livelihoods. Human asset empowers individuals and gives individual or household the opportunity to invest in their own selves, it in turn affects the sharing of life-time earnings in the society, with those rich in human asset having advantage over the rest of the household or society whose human asset base is poor, since earnings are likely to be unequal and lop-sided because those households or individuals with sound human asset tend to have higher income by virtue of their human asset endowment (Weiss, 2015). Similarly, human asset entails household's capability and resources that include skills, knowledge (Education), the capability to exact their physical and psychological ability to work (farm or off-farm)

to earn a living and good physical and material health which enable them to engage in livelihood strategies (Krantz, 2001).

Accordingly, human asset denotes qualities in an individual or household head which includes skills (talent, aptitude, abilities, competence), knowledge (formal & informal), capacity to engage in labor and sound health status whose combined effect empower individuals or public to practice various livelihood strategies to realize their livelihood goals. On household human asset determines the quantity and quality of labor at their disposal, this differs depending on the household size (population either nuclear or extended), skill levels (level of education, entrepreneurial abilities), leadership potential (unlimited political participation), health status. Specifically, the human asset as a livelihood asset, is a component of the assets required in achieving livelihood outcomes, as overcoming ill-health and lack of education are necessary toward meeting livelihood attainment (DFID, 1999).

The proponents of human asset approach posited that “the difference between prosperity and poverty for a country depends on how fast it grows economically over the long term” (Barro, 2002: 9). Therefore much emphasis has been accorded to education, which is a component of human asset as a catalyst that enhance the economic well-being of those who invested in it, since it has been conceived as investment which is capable of ensuring outcomes in form of higher earnings (Andres & Chavez, 2015). Capability as catalyst for investment in human asset remains an integral part of the subject (human being), hence it becomes a perpetual characteristic so it cannot be sold, but remains in contact with the larger society and market, while

affecting positively the earnings of the human agent thereby enhancing his livelihoods (Andres & Chavez, 2015; Sen, 1997; Schultz, 1961).

The foregone discourse on human asset revolves around issues ranging from knowledge, skills, physical and mental health and capability as the basic elements of human asset and that challenging the menace of vulnerability/poverty begins with endowment in human asset. The next on discussion is on financial asset (FA).

#### **2.10.2 Financial Asset (FA)**

Financial asset means the financial resources/titles that people need or use to pursue their livelihoods desire. This includes flows and stocks which contribute to consumption and production in the context of livelihood earnings, thus making it a vital livelihood building block as it relates to availability of cash or equivalent, which enhances livelihood strategies (DFID, 1999). Moreover, financial asset composed of the economic resources and availability of money or its equal, which people acquire or need to acquire for use to accomplish their livelihoods objectives. It empowers people to adopt a variety of livelihood strategies (Bajwa, 2015). It has been posited that, there are basically, two sources of financial asset “accessible stocks (cash, Bank deposits or liquid assets [jewelry & livestock]; and regular inflows of money [labour income, transfers, pension and remittance] which are mostly dependent upon others” (Bajwa, 2015: 9). It has been argued that financial asset is the most useful of all assets as its acquisition can lead to having other assets towards achieving livelihood aspirations for instance (human asset) investing in education, purchase of food to avert food insecurity (Bajwa, 2015), but financial asset has been adjudged to be very limited

in terms of access to the poor which is making other assets that are vital difficult to be accessed by the poor (Kollmair & Juli, 2002).

Similarly, economic/financial asset (as it is being called interchangeably), means the financial base (cash, credit, savings, and other economic assets, including basic infrastructure and production equipment and technologies) which are essential for the pursuit of any livelihood strategy (Scoones, 1998). This connotation of financial asset has summarized what financial asset is all about in such that any monetary source either as result of formal employment and non-formal, loan facility from Banks, cash assistance from government, and soft loan as well as liquid asset movable and non-movable can serve as a component of economic or financial asset.

### 2.10.3 Social Asset (SA)

The notion of social asset as a resource for action has three (3) configurations: obligations and expectations, information channels, and social norms. The social asset is not a single entity, but a combination of different units with two features in common: "they all consist of some aspect of social structures and they facilitate certain actions of actors whether persons or corporate actors within the structure" (Coleman, 1988). It has been argued that social asset is valuable, hence a medium for the accomplishment of goals without which the attainment of the goal would be impossible. Social asset influences the structure of relations between actors, and it is not a feature of either of the actors, but binding a unit (association, social clubs etc.), since purposive organizations are corporate actors (Coleman, 1988). Likewise, social asset basically refers to a set of trust, institutions, social norms, social networks and organizations which shape the relation of actors in a society and a form of asset to the

individual and the collective interest in ensuring well-being. It should be noted that, Loury (1977) advanced the concept 'social asset and later was popularized by other studies Bourdieu (1986), Coleman (1988, 1990) and Putnam (1993), although it existed before then (Banfield, 1958).

Accordingly, social asset equates 'the sum of the resources, actual or virtual, that accrue to an individual or group by virtue of participating in a durable network of more or less institutionalized relationships of mutual acquaintances and recognition' (Bourdieu, 1986: 2). To Adler, and Kwon (2002) social asset is the nature of social relations that accelerate action and unlike other types of asset, therefore, social asset is rooted in the organization of relationships. Central to it, is membership in form of relationship with others, hence others link a member to opportunities (Portes, 1998), it is not the sole possession of any single individual (Coleman, 1990), rather it is group centered and social structure inbuilt (Narayan, 1999), and signifies characteristics of social organization which may enhance society's efficiency, accelerating harmonized actions (Putnam, 1993), comprising horizontal and vertical social formations that bind indigenous groups to wider social groups (Grootaert, 1997). Another element inherent in social asset is the existence of a strategy as Wodon (1997) espoused that, social asset is a web of horizontal relations and associated norms that allow the pursuing of collective interest, it is the binding force that keeps groups and societies together, accelerates bonds of shared values, norms and institutions (Narayan, 1999).

Additionally, social asset has component such as; collective action which conveys opportunity for equal benefit to collective action (Woolcock, 1998), it ensures social support, assimilation and unity amongst members (Requena, 2003); interpersonal ties

which entail linear combination of emotional intensity, mutual confiding and collective sharing (Granovetter, 1973). There is further classification of subtypes of interpersonal ties which includes bonding, bridging and linkages (Halpern, 2005).

Table 2. 4

*Levels of Social Asset*

Ties	Bonding	Bridging	Linkages
Micro Level	Family	Peers	Power-holders
Meso Level	Intra-community	Inter-community	Between strata
Macro Level	Nation	International networks	Global organizations

Source: Halpern (2005)

Another important components of social asset are cognitive and structural while in the cognitive sub-component issues like norm and values are entrenched which impliedly geared people towards solidarity and mutual cooperation (Grootaert & Bastelaer, 2002; Krishna & Uphoff, 1999), although Mayoux (2001) cautioned against haphazard or blind adoption of norms and conventions concerning social asset construction, failure of which may lead to contradiction and biasness toward certain gender, age grade, norms and values etc. Where as in terms of structural sub-component social asset brings people together and enhance equal benefit resulting from collective action through networks and responsibilities (Uphoff, 2000). Therefore, it is pertinent to note that, the above postulations have portrayed social set as a potent resource or asset that has the beneficial effect on the livelihoods of the households or individuals that accessed it, as it enhances togetherness, mutual relationship and collective actions geared toward common good amongst members.

#### 2.10.4 Physical Asset (PA)

Physical asset is basically seen as resource/asset that is employed in production which is also a product of human construction (reproducible). It could be a

machines/equipment, buildings or vehicles and other movable and non-movable facilities. Unlike other types of assets (human, financial, social and financial) the phrase “physical” symbolized physical asset as an immovable (in some context) fixed asset, although physical asset in some sense disregards non-reproducible production elements like land (Kataria *et al.*, 2012). Moreover, physical asset involves the basic facilities and other resources required to enhance livelihoods. Infrastructure comprise of modification or transformation impacted on the physical environment which in turn enables people to realize their basic needs and improve their productive capacity (DFID, 1999). Producer goods signify kits or apparatus which human beings influence through their physical and mental power, which translate to the production process. In this context, physical asset assumes resources critical to sustainable livelihoods attainment, these include “affordable transport; secure shelter and buildings; good roads, health facilities, adequate water supply and sanitation; clean environment, affordable energy; and access to information and communications” (DFID, 1999: 2.3.4).

Consequently, physical asset is an essential livelihood asset that households and individuals need to access as it enhances livelihoods through ensuring satisfactory living standard which enable the flourishing of other opportunities as social amenities like good roads, safe drinking water, electricity and accessible and affordable healthcare all add value to well-being thereby propelling the quest for other assets and better livelihood outcomes.



#### 2.10.5 Natural Asset (NA)

Natural asset represents the living and non-living elements of the ecosystem, apart from people and what they produce, which add to the making of goods and services that are important for the well-being of the people (Guerry *et al.*, 2015). Assets are of a different kind which includes manufacturing asset (buildings and machines), human asset (knowledge, skills, experience, and health), social asset (relationships and institutions), and financial asset (monetary wealth), as well as natural asset. These different assets interrelate to produce goods and services, for example, fish harvesting depends on the availability of fish stocks (natural asset), which depends on natural resources (natural asset), but harvesting also depends on purchase of fishing vessels (financial asset), the skills and experience of fishers (human asset), and fisheries governance (social asset) (Guerry *et al.*, 2015).

Specifically, Ellis (2000) conceived natural asset as summation of those resources which include land, water and biological resources that people act upon to create livelihood earning for survival. Similarly, natural asset denotes ecological resources whose elements together make natural asset therefore, natural asset is multivariate which encompasses both recyclable and non-recyclable resources in the physical environment. This emphasizes that natural asset is multidimensional, and that it comprises both renewable and non-renewable assets (Ellis, 2000; Carney, 1998). Natural asset here means natural resources endowment of a particular society that could be harnessed (in some cases) in raw form and transformed to goods or semi-goods which provide earning (livelihoods) to an individual or household.

The Table 2.5 below provides detail of elements that composed natural asset and what it can be done with depending on nature and purpose for which it would be employed for, so as to earn income or be used in terms of livelihood strategy.

Table 2. 5

*Elements of Natural Asset*

Land	E.g parks, public garden, refuse dumps
Water	Wells, dams, waterfalls, boreholes, canals, irrigational water, rivers
Biological resources	Trees for economic purposes (fruits & firewood) shrubs, grass/plants.
Non-biological resources	Rocks, clay, solid minerals, sand/soil

Adapted: Twyman and Slater (2000)

Note these resources could be used for production and domestic use, serve as food and could be traded or sold. Natural asset is a generic concept used for the natural resource supplies from which resource flows and activities necessary for livelihoods emanate. There is a wide variation in the resources that make up natural asset, from intangible public goods such as the atmosphere and biodiversity, to divisible assets used directly for production (trees, land, and water resources e.t.c.).

## 2.11 Livelihood Strategy (LS)

Livelihood strategies entails a structured collection of livelihoods objectives, benefits and undertakings influenced by ecological resources, socio-economic, political, and emotional elements devised to secure an ideal standard of life for households and individuals in social settings (Walker, Mitchel & Wismer, 2001). Livelihood strategies means an overarching concept employed to explain a series or collection of activities and alternatives that people resort to, with a view to accomplishing their livelihoods' goals, which range from acquiring stocks, productive services, and reproductive choices (Su & Shang, 2012). It should be noted that, literature has emphasized that,

livelihood strategies vary, depending on the context and circumstances, households, and over time frame (Collier, 1999; Stirrat, 2004). This clearly shows that livelihood strategies could be diversified and that there are so many dimensions of livelihood strategies.

Livelihood strategy is influenced by the level of access and availability of livelihood assets to households and individuals which determines what livelihood strategy a household or individual should choose or adopts (Su & Shang, 2012), thus deductively it could be argued that, livelihood assets availability determines or influences livelihood choice. Livelihood strategies according to DFID (1999) depend on the time, geographical space, circumstances, sector, households and or individuals, therefore, livelihood strategies connote an all-encompassing notion of processes, activities, and options people devise to pursue their livelihoods' objectives. These activities span from productive activities (formal employment, farming, off-farm labor), investment (raising livestock, assets acquisition, petty trading), and migration (DFID, 1999).

The above overview depicts that livelihood strategy is a step or mechanism employed by households to augment their conventional earnings, and to further secure their households and ensure their livelihoods security and keep away from poverty and vulnerability to it.

## **2.12 Government Intervention (GI)**

Government intervention is a generic term which stands for involvement or policy action by government towards curbing the menace of poverty and vulnerability to it in the society. Like other concepts or terms government intervention (GI) cannot be

defined in just one best way as literature indicated that there are numerous ways in which government can address socio-economic issues depending on, specifically, what the government deems fit to do and for what (Loewen, 2009). This has brought the idea that, strategy(ies) adopted by government towards poverty reduction in the society may be one of the broad categorization of the strategies (programmatic or systemic) usually government use to address poverty, although Loewen (2009) posited that the two are complementary in some respect. To DFID (1999) Intervention is a general term that denotes action and processes, institution, laws, programs, state and non-state actors whose goals are to provide platform for the good of the poor in the society. In essence, processes, institutions, and structures shape and influence the type of livelihood assets required, and the nature of livelihood outcomes, in particular, it plays a moderating role towards ensuring livelihoods and mitigating the effect of vulnerability and poverty. Generally, government intervention to Loewen (2009) is broadly categorized into two; (1) programmatic intervention and; (2) systemic intervention. Therefore, GI is either of the two, it may have sectoral inclination, however still its motive is within the purview of the typologies below.

#### **2.12.1 Programme Intervention (PI)**

A programmatic intervention or strategy is a kind of intervention designed and implemented as specific program or a collection of programs. The program or programs can be long term or short term, and can also be of large and small scales. The programs can be stand-alone activities or joint with others to form a comprehensive framework of harmonized programs. The major concern of programmatic intervention rests on empowering households and individuals to flourish within the socio-economic and political frames of the society. Sustainability of the

intervention program rests on consistent rejuvenation of human and material resources (Loewen, 2009).

### **2.12.2 Systemic Intervention (SI)**

Systemic intervention (strategy) denotes an attempt to restructure the socio-political and economic structures of society that is to make changes in the way the system operates. Whilst a programmatic intervention is geared towards empowering people to adapt to the priorities of the systems, the systemic interventions, generally, are planned to rearrange policies and structures to embrace the needs of specific sets of people. Unlike programmatic intervention, once systematic intervention is implemented its sustainability may not necessarily depend on consistent renewal of resources (Loewen, 2009). Systemic intervention requires modification in policies, processes or structures. In the context of systemic intervention societies are participants, and thus, complementing government efforts with advocacy, insight and other services. It is therefore on the basis of the postulations that, the present study considered government intervention to mean conscious and consistent effort made or being made to empower households with the capacity to have sustained livelihoods and access to livelihood assets which would have impact on the well-being of the households and to overcome poverty and vulnerability to it. The Table 2.6 below highlights on the goals of government intervention or strategy towards addressing poverty, which are in line with sustainable livelihood approach.

Table 2. 6

*Highlight on the Supposed Goals of Government Intervention towards SPR*

Framework	General Description	Priorities for Action
Sustainable livelihood framework	<ul style="list-style-type: none"> <li>• It is a holistic asset-based approach</li> <li>• It is an effective mechanism for poverty reduction programs design, implementation and evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>• Strategies and interventions concerning poverty reduction are envisaged to strengthen and empower households and individuals to achieve sustainable livelihoods.</li> <li>• <b>Human Asset:</b> knowledge &amp; experience, skills, employability, and good health</li> <li>• <b>Social Asset:</b> Friendships, social networks, membership of association, affiliation, political participation.</li> <li>• <b>Physical Asset:</b> Electricity, roads, housing, transportation, hospitals etc.</li> <li>• <b>Financial Asset:</b> Cash flow, savings, remittances, financial assistance.</li> <li>• <b>Natural Asset:</b> Forest resources, water resources, mineral resources, economic resources.</li> </ul>

Adapted: Loewen (2009)

The above Table 2.6 summarizes the supposed activities that government in the society is expected to usher-in and guarantee sustainable poverty reduction.

### 2.13 Summary of Chapter

The chapter reviewed the relevant theoretical literature on the concept of poverty, the poverty line which basically looked at minimum income level of some selected countries in Africa, Asia and Americas and Europe. Similarly, theories of poverty, typologies, its measurements and or approaches were extensively discussed. Further to that, sustainable livelihood and sustainable livelihood assets, government intervention and sustainable poverty reduction were discussed.

Summarily, the chapter seeks to look at extensively what poverty is in both context and content and as well discusses the variables of the study which include the independent variables (IVs) human asset (HA), financial asset (FA), social asset (SA), physical asset (PA), natural asset (NA), livelihood strategy (LS), as well as the

moderating variable which is government intervention (GI), and the dependent variable that is sustainable poverty reduction (SPR).



**UUM**  
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## **CHAPTER THREE**

### **EMPIRICAL STUDIES ON SUSTAINABLE LIVELIHOODS**

#### **3.1 Introduction**

Basically, the study in this section explored empirical studies that either confirm or reject the influence of livelihood assets, livelihood strategy and government intervention on curtailing poverty and vulnerability in general. The essence is to see how, access to the livelihood assets and adoption of effective livelihood strategy can affect household's livelihoods and how they influence sustainable poverty reduction, and how government intervention influences livelihood outcomes towards poverty reduction on a sustainable basis.

#### **3.2 Human Asset and Sustainable Poverty Reduction**

Human asset (HA) is an aggregate of capabilities (i.e., skills, knowledge, good health and employability) which a household or an individual requires to engage in livelihood activities that in turn enable the household head or an individual to make a living, so as to stay away from poverty and vulnerability to it (DFID, 1999; Weiss, 2015). Current literature has adduced empirical evidence on the strong relationship between human asset (HA) and sustainable poverty reduction (Kumo, 2015). However, studies concerning livelihood assets and poverty reduction that used sustainable livelihoods approach are very scanty (Lim & Mansur, 2015) and concentrated in some part of Asia, and little part of Eastern Africa, while none, to the



best of researcher's knowledge, was conducted in Nigeria and Sokoto State in particular. Similarly, some little empirical studies (contemporary literature) employed sustainable livelihood approach (SLA) in studying the effect of livelihood assets, livelihood strategy, and government intervention toward sustainable poverty reduction and well-being.

In a study by Kamaruddin and Baharuddin (2015) conducted in Kedah, Malaysia regarding the importance of good aquaculture practice toward enhancing the income earnings of fish farmers result reveals that human asset was found to be significant towards improving income, in particular experience in the field of aquaculture, high level of technical knowledge, training/skills and age, which concurs with the finding Olawumi (2012) which posited that lack of knowledge, skills and information were opined to have effect on decision and ideas on assets investment and exploitation, as income impact on other assets as well as sustainable livelihood and food security as such keeps households away from poverty and vulnerability to it. Similarly Lim and Mansur (2015) conducted study in Sabah, Malaysia on poverty and vulnerability in Rungus ethnic community whose results found that there is significant positive relationship between access to human asset and poverty reduction as knowledge and skill enable employability which in turn impact on livelihoods of households thus help in keeping them away from poverty, the result further indicated that household that does not access human asset are prone to poverty and vulnerability to it.

In the same light (Alfonso *et al*, 2015) conducted a study in district 1of Medellin Columbia on livelihoods with the assessment of accessibility to the livelihood assets, the results shows that human asset and particularly employability, education, and skills

play important role on livelihood sustenance which impact on household ability to stay away from poverty and vulnerability. Furthermore, Seng (2015) conducted a study in rural Cambodia on the effect of off-farm activities on farm households' in relation to food intake. The result in particular found that households with high level formal education (Lanjouw & Sherrif 2004; de Janvry, Sadoulet & Zhu 2005; Akaakohol & Aye 2011), headed by middle aged male have more potentials of diversifying into off-farm activities. Education and skills have been emphasized as the panacea towards nonfarm activities (Rao & Qaim 2011), which enhance their productive capacity and income thus securing livelihoods and protecting the household from poverty. Likewise in a study by (Unmesh & Narayanan, 2015) conducted in the State of Uttar Pradesh India on farming households with agriculture as the main source of income and livelihoods, with others combining agriculture activities and off-farm work to supplement income. Result of the study revealed that level of income of households determines households' assets level as household expenditure stands as proxy to assets base of households which concurs with (Morduch, 1999; Dercon, & Krishnan, 2002), in Africa, and (Carter, Little, Mogues & Nagotu, 2007) in Honduras.

Similarly, the study revealed that different coping strategies were adopted to curtail the effect of the shocks but poor assets base was making the effort almost fruitless as for instance. Human asset, (age, gender, and level of education) was found to be effective in the choice of coping strategy thereby having an impact on the livelihood sustainability of the household while reducing poverty and vulnerability to it. Similarly, a study was carried out by (Kumo, 2015) on poverty in transitional economies, conducted in respect of former Soviet Union, Eastern and Central Europe, with specifics on the determinants of poverty dynamics. The result of the study

revealed (household size, level of education) human asset has significant impact on determining poverty, as households and individuals with human asset have more opportunity for employment, off-farm activities to secure livelihoods which is in line with (Shehu, & Abubakar, 2015; Mawajje, & Holden, 2014). Mendez-Lemus and Vieyra (2014) posited that human asset (high level formal education, good health status, and household size) significantly affects livelihoods of households thereby influencing their poverty status.

In a similar study conducted in Malaysia (Kamaruddin & Samsudin, 2014) on rural poor result of the study bared that, the hard-core poor were having very low human asset, like low level of education and lack of formal education which limit skills, capacity and technical know-how which affect their income and employability which agreed with Chen et al (2013) which found that skills and knowledge, and health status have significant effect on livelihood security and have impact on well-being. Furhtermore, in a study conducted by Samsudin and Kamaruddin (2013) in Kedah Malaysia about the distribution of livelihood assets amongst the core poor, the result reveals that 49 percent of the respondents lack formal education which affected their employability, capability, and economic status thereby pushing them into poverty.

Again, the study conducted by Gounder (2013) in Fiji supported the importance of livelihood assets if fighting poverty and vulnerability. Household from the rural and urban divides were the units of analysis, and consumption (Ravallion, 1992) as measurement of welfare was chosen against income, which was motivated by the premise that, income in rural areas is associated with hitches, which sometimes is lacking, and also the smoothness of consumption rather than income in welfare

measurement (Mukherjee & Benson, 2003), and secondly consumption expenditure is what determines actual living standard (Narsey, 2008; Silva, 2008). The approach adopted by the study was ordinary least square (OLS) (Mukherjee & Benson, 2003), and a quantitative method was adopted. The result shows that level of education, age, gender (male) and size of households (large) determine welfare and incidence of poverty, however Lanjouw and Ravallion (1995) cautioned against concluding that large household size correlates with poverty and vulnerability to it, the finding concurred with the study on livelihoods conducted by (Islam & Yew, 2013) in Bangladesh with respect to poor fishermen in which training and skills acquired in fishing were found to have their capacity improved thereby causing increase in income thereby enhancing livelihoods security.

Other empirical studies that support the importance of access to human asset in livelihood sustainability and poverty reduction include Thi, Dao, & Manh (2013) gender, level of education and skills, employability which is also related to the findings of a study conducted in Dowa and Lilongwe Districts in Central Malawi ((Dzanja, Christie, Fazey and Hyde, 2013; Adunga, 2013)). At the same time Oumer and De Neergaard (2011) assert that income quartile with access to human asset (age, level of education) was found to be effective on livelihoods, thus central to poverty reduction which correlates with the finding of (Uy, Takeuchi, & Shaw, 2011; Akudugu, 2011; Silas, & Jin, 2011; Ng'ang'a, Jeannette, Notenbaert, Moyo, & Herrero, 2011). Other studies that attested to the importance of access to human asset in securing livelihood and keeping away from poverty and vulnerability to are Ahmed, Troell, Alliso and Muir (2010) years of experience and education, Van Der Berg (2010) education, Hahn, Riederer, & Foster (2009) age and gender, level of education, household size, and

employability, that households with elderly male heads that are educated have more income and devised more livelihood earning activities which have effect on poverty.

Additionally, Ansoms (2008) conducted a study in Rwanda on poverty and rural livelihoods using clusters (Punj, & Stewart, 1983), and the result reveals clusters with younger male household heads with higher educational attainment do have more income than others thus more prepared against poverty. This finding concurs with Teh, Cheung, Cornish, Chu & Sumaila (2008) who asserted that lack of education and skills affect livelihoods and plunge households into poverty which replicates (Cinner & Pollnac, 2004; Kruger *et al.*, 2007; Olujide, 2006).

However, Ahsan (2014), Anun, Annim and Arun (2013), Mandere, Ness and Anderberg (2010) and Jansen *et al* (2006) found human asset to be ineffective towards improving income or livelihoods of households particularly education (Pendar & Kerr, 1998) and large household size as population increase put households at the risk of poverty and vulnerability because the farmland become scarce thus affect food security of the households (Jansen *et al.*, 2006).

Therefore, based on the findings of the previous studies in relation to the importance of access to human asset on poverty reduction, income, and livehood security, coupled with the fact that all the studies were conducted in other contexts, as such there is a justification for this study in the present context, therefore, the present study hypothesized the statement below:

*H<sub>1</sub>: There is a significant relationship between human asset and sustainable poverty reduction.*

### **3.3 Social Asset and Sustainable Poverty Reduction**

Social asset means social resources that avail opportunities to the people in the society in form of relations and interactions which bind, bridge and link different households and individuals, thus trickling mutual benefits and socio-political empowerment of the poor households and individuals (DFID, 1999). It has been posited that social asset is important and also a medium through which goals could be attained and affect the relationship between actors (households or individuals) as members of social networks, and social clubs (Coleman, 1988). Social asset composes of trust, institutions, social norms and social networks, which form asset to the households or individuals and therefore guarantee well-being of the actors (Coleman, 1988).

Empirical studies support the relationship between social asset and poverty reduction through access to NGOs and loan from corporate bodies and training by social networks (Samsuddin & Kamaruddin, 2013; Islam & Yew, 2013; Oumer & De Neergaard, 2011). However, the empirical studies that used sustainable livelihood approach were more related a to dimension of poverty like household income or consumption, and reducing the effect of flood, drought etc, and the very few on poverty reduction were conducted in Asia, Europe and not in Nigeria and particularly in the area of the present study Sokoto State, thus the justification for the present study.

In a study conducted by Lim and Mansur (2015) in Sabah, Malaysia towards understanding poverty and vulnerability using sustainable livelihood approach in Rungu ethnic community the result of the study reveals that access to social asset is significant in overcoming poverty, as the poor respondents were found to lack linkages with NGOs and social networks as well as links to government officials (social asset). The finding concurs with the result of Kamarudin and Samsudin (2014) which

recommends for the households to access cooperative societies as the study found that the poor households were lacking in access to cooperatives. Similarly, Alfonso et al., (2015) in a study conducted in Colombia on livelihoods assessment, the result of the study found that social asset (social network, linkages and NGOs) is important to livelihoods of households which helps in reducing poverty which correlates with the finding of (Kumo, 2015, Mendez-Lemus, & Vieyra, 2014). Similarly, Shehu and Abubakar (2015) found that access to social asset through membership of association, social networks and community societies and non-governmental organization has resultant effect on income and livelihoods of households and enable them to keep away from poverty and vulnerability this is in line with the studies of (Mawajje & Holden, 2014, Mendez-Lemus, & Vieyra; 2014).

Additionally, Bosongo, Longo, Goldin and Muamba (2014) in a study conducted in Zambezi on the effect of natural disaster the result of the study revealed that access to social networks (social asset)) was very significant to the livelihoods of the households as non-government organizations (NGOs) provides support/assistance in the wake of natural disaster which helps in making household capable to absorb shocks and recover from seasonality which push them into poverty. The finding of the study replicates the study of Chen et al. (2013) who in their study in North-western China it has been revealed that membership of community association, family decision circle, information and awareness have impact of livelihoods as social asset avail opportunities that help households in the time of need and prepare them towards coping with poverty and vulnerability.

In the same light, Samsudin and Kamaruddin (2013) in a study conducted in Malaysia reveals that the hard-core poor were found to be lacking contact with institutions and do not engage in social relations with an association of mutual benefit (social asset) that could have helped them move out of poverty. Related to that Gounder (2013) in his study in Fiji found that ethnicity (social asset) plays role in well-being as the study found that Fijians were better and less poor than non-Fijians in some part of the Country. While Islam and Yew (2013) in a study in Bangladesh posited that affiliation with government institutions, and non-governmental organization affects the income of poor fishermen which has impacted significantly on their livelihoods thus helping them to overcome poverty, whereas the study of Thi et al. (2013) revealed that social asset like family ties and borrowing from members of the family and linkage with microfinance institutions enhance livelihoods of the households that accessed social asset thereby empowering them against poverty, and vulnerability, this concurred with the studies of (Arun *et al.*, 2013; Narayan, Patel, Schafft, Rademacher, & Koch-Schulte, 2000).

In line with the above, Dzanja et al. (2013) conducted a study in Malawi the results show that access to social asset (interpersonal relationship, bonds, and assistance) enhances food security which is essential to livelihoods as it affects human asset, and also the cheapest asset that the poor can access at less cost (Portes, 1998). This finding corresponds with the finding of Oumer and De Neegaard (2011) in Ethiopia on poor farming households. The result indicated that a quartile with access to social asset (research groups/ NGOs) have more income and other livelihood assets as the contact empowered the households with the new ways of farming and awareness on effective livelihood strategies which have general effect on livelihood and poverty reduction,



this finding was supported by (Barr, Fafchamps, & Owen, 2005; Uy *et al.*, 2011; Akudugu, 2011; Johnson, Siles, & Jin, 2011; Ahmed *et al.*, 2010).

Furthermore, Hahn, Riederer and Foster (2009) suggested that vulnerable households in their study area were so because they do not have access to the social asset, particularly community association, non-governmental organizations, contact with government institutions and social networks as such they fall victims of poverty characterized by low-income and food insecurity. The finding concurred with result of Ansoms (2008) in which a cluster was found to be rich in resources as its members embraced and accessed social asset which betters their lots and keep them away from poverty and vulnerability, and Teh *et al.* (2008) espoused that, income of fishermen reduces (Pitcher, Watson, Courtney & Pauly, 1998; Cheung & Sadovy, 2004), as they do not access social asset like link to non-governmental organizations and social networks, research groups and institutions that could have open them other doors of opportunities to diversify their livelihood strategy as supported by (Pomeroy & Carlos, 1997; Neis *et al.*, 1999; Aswani & Weiant, 2004). In a similar study by Jansen *et al.* (2006) result revealed that access to social asset particularly collective action in form of community development work, food for work through communal farming enhanced bonding in the society which supports livelihoods as the culture of sharing and assistance help members in keeping away from the claws of hunger and vulnerability to poverty.

However, Portes (1998) cautioned that as significant as the social asset could be there is the need to trade carefully in social relationships between individuals in the society,

and beyond, as certain negative traits could be transmitted which perhaps are deviants or inculcate negative traits that are of consequences in the society.

Therefore, based on the supportive positions advanced by the results of the previous empirical studies with regard to the importance of access to social asset towards poverty reduction, the present study hypothesizes the below provisional statement:

*H<sub>2</sub>: There is significant relationship between social asset and sustainable poverty-reduction.*

### **3.4 Physical Asset and Sustainable Poverty Reduction**

Physical asset denotes physical resources useful to households or individuals in the production of good and services which in turn secure livelihoods as it involves productive equipment and facilities that ensure good of the households or individuals (Kataria *et al.*, 2012). Physical asset comprises of affordable transport and means to it, better housing, good drinking water, sanitation, telecommunication and affordable and clean energy, medical facilities and market (DFID, 1999). Similarly, available empirical evidence suggested the linkage between physical asset and poverty reduction (Alfonso *et al.*, 2015; Arun *et al.*, 2013). These were premised on the essence of physical asset in ensuring sustainable livelihoods, which further helps in reducing poverty and vulnerability to it (Krantz, 2001).

Other empirical studies that supported the role of access to physical asset toward sustainable poverty reduction include, Kamaruddin and Shamsudin (2015) in a study in Malaysia which result indicated that physical asset (farming tools/equipment, ponds) had significant effect on the income of fish farmers thus enhancing their

Livelihoods which enable them to keep away from poverty and vulnerability in line with (Veerinaet, Nandeerash & Gopal Roa, 1993; Ohajianya *et al.*, 2013; Abbas & Ukoje 2009). The finding was also supported by the study of Lim and Mansur (2015) in their study aimed at understanding poverty and vulnerability in Rungus ethnic in Malaysia as the result shows that significantly access to physical asset enhances income of households and helped in their non-poor status, therefore submitted that access to physical asset leads to sustained poverty reduction. In line with that, in a study by Alfonso *et al.* (2015) access to physical asset was revealed by the findings of the study to have positive effect on livelihoods of households as access to good road, electricity, means of communication and closeness to infrastructure like hospital, market and schools contributed to livelihood accomplished of the population under study, this was further corroborated by the studies of (Seng, 2015; Kumo, 2015; Shehu, & Abubakar, 2015).

In a related study by Mendez-Lemus and Vieyra (2014) in Mexico with the aim of studying the dynamics of poverty the result reveals that access to physical asset has effect on poverty status as it was found that lack of access to clean drinking water and electricity, good road and means of transportation affected the livelihoods and income base of the targeted population of the study thereby deepening their poor status as the web of lacks limited their opportunities of livelihoods actualization. Additionally, the study of Kamaruddin and Samsudin (2014) in Malaysia revealed that access to physical asset enhances income and livelihoods as possession of furniture/sofas, access to good road and safe drinking water, electricity and healthcare facilities improved well-being and positively affects livelihoods of household, thus shielding them from the menace of poverty, this position was supported by the study of (Nasif Ahsan,

2014). Similarly, study conducted by Chen et al. (2013) in China, the finding of the study shows that access to physical asset has great effect on the livelihoods of the individuals and households specifically accessibility to good source of energy (electricity and cooking gas), household fixed assets and durable goods.

Furthermore, the study of Samsudin and Kamaruddin (2013) revealed that physical asset is important to livelihood consolidations as it enhances and improves living condition and well-being of households. In essence access to houses and basic infrastructure, good toilet facilities, cooking gas, electricity, roads, and possession of cars and motorcycles were found to better off households. The findings of Samsudin and Kamaruddin (2013) was supported by Gounder (2013) study in Fiji as absence or lack of access to physical asset pushed rural dwellers into poverty as they are living in remote areas with lack of basic infrastructure like roads, market for agricultural products, electricity, telecommunications facility, and health facilities, thus emphasizing that access to physical asset is core to consistent poverty reduction as espoused by (Kristjanson, Radeny, Baltenweck, Ogutu & Notenbaert, 2005, Jansen *et al.*, 2006). Moreover Dzanja et al. (2013) findings supported the submission in which closeness to market and accessible road network (physical asset) were found to have positive impact on livelihoods as such can lead to poverty walkout, this was further justified by the findings of (Oumer & De Neergaard, 2011; Akudugu, 2011; Lalnilawma & Chowhan, 2011; Ng'an'ga, 2011; Mandere *et al.*, 2010; Ahmed *et al.*, 2010; Adunga, 2013). In a similar study by Hahn et al. (2009) access to physical asset (portable drinking water and boreholes/water tanks) were found to enhanced livelihoods as it added value toward healthy human asset (people). In the same vein Ansoms (2008) revealed that, access to physical asset (good sanitation facilities,

housing, affordable and efficient means of transportation and affordable and good energy source) improve welfare of households thereby preparing them more for livelihoods accomplishments of food security and income generation which help toward poverty reduction and averts vulnerability.

Accordingly, Teh et al (2008) conducted a study on livelihoods of the fishers in Hong Kong whose result confirmed that lack of access to physical asset (nets, boats) plunged the fishermen into poverty because their livelihoods were not secured thus affecting assets accumulations. While Kruger et al (2007) carried out a study on the food wellbeing and livelihood of the black South Africans and the result shows that they were poor and vulnerable because they lack a critical asset (physical asset) as they do not have access to electricity, good roads and means of transportation which hampered their livelihood since profitable economic activities requiring these components of physical asset cannot be carried out to create wealth and job opportunities, while Olujide (2006) found that poor fishers (women) in the study area lacked physical asset, particularly storage and preservation facilities, and good roads which affected their income and livelihoods resulting into poverty and vulnerability.

However, it has been argued that the mere availability of physical asset structures like hospital, electricity, and schools that are ineffective, inefficient, unaffordable and inaccessible do not enhances livelihoods rather affect it negatively as indicated by Hahn et al (2009) in Mona district where there were hospital facilities but the inhabitants were more prone to diseases like malaria and others for being inefficient.

The above reviewed empirical literature supported the significance of access to physical asset on poverty reduction thus there is the need to be conducted further study as the studies were conducted elsewhere than the context of the present study. Therefore, there is need for further empirical evidence in another context Sokoto State-Nigeria therefore the present study hypothesizes that:

*H<sub>3</sub>: There is significant relationship between physical asset and sustainable poverty reduction.*

### **3.5 Financial Asset and Sustainable Poverty Reduction**

Financial asset signifies economic resources that households or people need or employ to meet their livelihoods desire, which includes flows of cash and stocks that contribute towards households' consumption and production, and livelihood security (DFID, 1999). Financial asset implies economic resources which are needed to meet livelihoods objectives and enable households and individuals to acquire other assets that are essential to the households towards staying away from poverty and vulnerability to it (Bajwa, 2015)

Furthermore, empirical literature supported the relationship between access to financial asset and poverty reduction for instance Kamaruddin and Baharuddin (2015) stressed that aquaculture practice by fish farmer increased their income resulting into saving and investment into fish farming through acquisition of more equipment and better seeds which impacted positively on their livelihoods thus empowering them to keep away from poverty and vulnerability to it. This finding is consistent with the finding of Lim and Mansur (2015) who found that poor households in Sabah Malaysia were poor because they do not have financial asset as the result indicated a negative -

$\beta$  value referring lacks of it, therefore access to financial asset was posited to lead them to walk out of poverty if accessed, this is also consistent with finding of Alfonso et al. (2015) in which financial asset was found to be inaccessible resulting from lack of employment opportunity which affect livelihoods, as such households were pushed into vulnerability to poverty.

In a similar study conducted by Seng (2015), the finding revealed that access to financial asset (income) enhances livelihoods and food security which avert the scourge of poverty and vulnerability to it. The finding of Seng (2015) was in line with the study of Unmesh and Narayanan (2015) in which financial asset (income) was found to influences expenditure and asset base of the households as the more income increases the more livelihoods are secured. In essence households that have more income are protected from vulnerability to poverty and effect of natural disaster which is consistent with studies conducted by (Morduch, 1999; Dercon, & Krishnan, 2002; Carter, Little, Mogues & Nagotu, 2007; Kumo, 2015). Furthermore, Shehu and Abubakar (2015) found in their study that access to credit and microfinance (financial asset) enhance income and livelihoods of the households, thus empowering them to overcome poverty and guard against vulnerability. This finding corresponds with the findings of Mendez-Lemus and Vieyra (2014) whose study's result shows that low-income obstructs livelihoods accomplishment of households thereby making them vulnerable to the poverty disease as their livelihoods cannot be secured which is consistent with the study of (Robinson, Siles, & Jin, 2011; Gounder, 2013, Kamaruddin & Samsudin, 2014, Bosongo *et al.*, 2014).

Likewise, in the study of Chen et al. (2013) in Northwestern-China the result of the study reveals that access to financial asset is fundamental in sustaining livelihoods as proceeds from farming activities and timber business improved income of households that engaged in forest governance through partaking in community based-co management, resulting to improved welfare and investment/expenditure which show that they are secured in terms of livelihoods, thus they are protected from vulnerability to poverty. In line with that, the study of Samsudin and Kamaruddin (2013) also revealed the significance of access to financial asset as hardcore-poor who have other sources like zakat and cash-transfer from government, and pension have improved living condition as they can finance their daily expenditure of physiological existence, therefore have the potentials of exiting poverty and avert its vulnerability. While Islam and Yew (2013) in their study in Bangladesh on poor fisher found that access to financial asset through access to loan by community-based fishers management (CBFM) availed opportunity for investment into other income generating activities to the poor fishers that were affiliated to the NGOs and accessed the loan, which has enhanced their livelihoods outcome, changed their lives and potentially put them at an advantage of walking out of poverty and improved well-being this finding is consistent with the studies of (Fletschner & Carter 2008; Ntifo-Siaw & Bosompem 2008; Miller & Martinez, 2006; Yunus, 2003); Duong & Izumida, 2002; Diange & Zeller, 2000; Hahn, 2009; Akudugu, 2011). The findings confirmed the finding of (Thi et al., 2013) which stressed that lack of access to credit/loan threatened the livelihoods of poor fishers and thus plunged them into being poor, therefore access to financial asset is central to sustainable poverty reduction and this is in line with the studies of (Olujide, 2006; Ng'an'ga; 2011; Oumer, & De Neergaard, 2011; Arun *et al.*, 2013; Adunga; 2013).



Additionally, the study of Ahmed et al. (2010) in Bangladesh revealed that income generation and access to loan from microfinance institution improved the living condition of prawn post-larvae fishers which helped them in sustaining their livelihoods thus cushioning the effect of vulnerability and impliedly protecting them from poverty which is in line with the study of Ansoms (2008) who observed that higher income do secure livelihoods and secure households from vulnerability to poverty which also corresponds with the studies of (Pitcher, Watson, Courtney & Pauly, 1998; Cheung & Sadovy, 2004; Teh *et al.*, 2008). In addition, Kruger et al. (2007) found that poor financial resources base like steady income from livelihood activities, cash-flow, wages and transfer deeply affect livelihood of black farmers' households in South Africa resulting into their poverty status as food security and other basic needs are threatened as such their livelihoods are not sustainable, this was in line with the study of (Jansen *et al.*, 2006).

However, despite the arguments above in support of financial asset's role in reducing poverty Unmesh and Narayan (2015) argued that monetary transfers and selling off of assets were found by their study to be less effective, instead poor households were plunged more into poverty and vulnerability by selling of their asset as suggested by proponents of financial asset as panacea to sustainable livelihoods.

Accordingly, considering the findings of the previous empirical studies discussed above which were conducted in other contexts apart from the present study area as such there is the need to carry out further research to explain poverty incidence using sustainable livelihood which the present study conducted. It was based on that the present study hypothesizes that:

*H4: There is significant relationship between financial asset and sustainable poverty reduction.*

### **3.6 Natural Asset and Sustainable Poverty Reduction**

Natural asset implies the living and non-living resources of the environment which add value to the production of goods and services that are essential to the general good of households and individuals and add value to livelihoods security which in turn affects poverty and vulnerability to it (Guerry et al., 2015). To Ellis (2000) natural asset denotes resources which include, land, water, and biological reserves that households and individuals act on to craft livelihoods to meet households' needs. Natural asset provides opportunities for the utilization, harnessing, and reproduction of natural endowment to make livelihoods and meet the essential needs of the households or individuals.

Related empirical literature suggested the relationship between natural asset and poverty reduction, for instance, Lin and Mansur (2015) in a study of Rungus ethnic community in Sabah Malaysia, the result shows that access to natural asset is the most effective instrument for intervention toward poverty reduction. Therefore access to land, improved seeds and production of cash crop were posited as essential for exiting poverty, this in line with the finding of (Kamaruddin & Samsudin, 2014; Alfonso et al., 2015; Seng, 2015). In a similar study conducted in India by Unmesh and Narayan (2015) result revealed that, shocks depleted the natural asset base of households covered by the study thereby destroying crops and the land for cultivation causing hunger and food insecurity which lead to poverty and vulnerability to it, this impliedly

affect the whole livelihoods, this is also in line with the finding of (Bosongo *et al.*, 2014; Mawajje, & Holden, 2014).

Nonetheless, Shehu and Abubakar (2015), and Chen *et al* (2013) stressed that access to farmland for agriculture provides farm income which enhances the livelihoods of household, while Mendez-Lemus and Vieyra (2014) in their findings revealed that depletion of land in terms of low soil quality and fertility affects the livelihoods of the households as their major source of living is destroyed therefore became vulnerable to poverty, this is consistent with the findings of Miah, Bari & Rahman, 2010; Rahman, Lund & Bryceson, 2011; Lalnilawma & Chowhan, 2011; Dzanja *et al.*, 2013; Nasif Ahsan, 2014).

Moreover, in a study conducted in Malaysia by Samsudin and Kamaruddin (2013) results show that poor access to natural asset by the hardcore poor contributed to their poverty plight as they had no enough land for cultivation and nor livestock which could have enabled them to secure their livelihoods to exit poverty and avert vulnerability to it, the finding supports the results of (Ansoms, 2008; Mandere *et al.*, 2010; Dumer & De Neergaard, 2011; Ng'ang'a *et al.*, 2011; Gounder, 2013, Islam & Yew, 2013; Thi *et al.*, 2013, Adunga, 2013). Similarly, Ahmed *et al.* (2010) in a related study in Bangladesh on the impact of catching prawn postlarvae on poor fishers, the result of the study revealed that access to water resources for fishing and land for agriculture (natural asset) is essential for building and securing livelihoods as it was indicated that group of fishers with more land and fishing nets and boat had more income than those in the other group, thus indicating that access to these components of natural asset enhances livelihoods sustainability and could lead to poverty walkout, this consistent

with the findings of (Pitcher, Watson, Courtney & Pauly, 1998; Cheung & Sadovy, 2004, Teh *et al.*, 2008). In a similar study by Olujide (2006) result indicated that water pollution and oil spillage endangered livelihoods of women who engaged in fishing as the source of income and livelihoods thus making them vulnerable and eventually subjecting them to poverty.

In relation to the above Van der Berg (2010) conducted study in Nicaragua on the impact of natural disaster on livelihoods particularly drought and flood which have devastating effect on livelihoods and result into poverty as recovery from the shock is impossible (Zimmerman, & Carter, 2003; Hallegatte, Hourcade, & Dumas, 2007; Jansen *et al.*, 2006; Hallegatte, & Dumas, 2009). The natural disaster affects the natural asset base of households and makes them vulnerable to poverty because their source of livelihoods has been destroyed occasioning very low income to households which is in line with the findings of (Paxson, 1992; Kochar, 1999; Del Ninno, Dorosh & Smith, 2003; Owen, Hoddinott & Kinsey, 2003; Hoddinott, 2006; Kazianga & Udry, 2006; Hahn *et al.*, 2009).

However, Van der Berg (2010) posited in the finding of her study that, mere ownership of land alone is ineffective towards livelihood improvement as there are other things to it, for instance, the resources to invest in agricultural activities which in return could help in the acquisition of other livelihood assets that are essential in sustaining livelihoods and by implication result to poverty reduction. The very empirical studies discussed supported the significance of access to the natural asset to poverty reduction, however, all the studies were conducted in other parts of the world, which shows the

need to conduct further empirical studies to explore more the relationship between natural asset and sustainable poverty reduction in other contexts.

Therefore, the present study intends to go further and explore more relationship empirically thus, the study hypothesizes that:

*H5: There is significant relationship between natural asset and sustainable poverty reduction.*

Consequently, it has been stressed by the literature that sustainability of livelihoods depends on the degree and type of livelihood assets households accessed in the process of building and securing livelihoods. Therefore, the positions of the reviewed empirical studies concerning the efficacy of livelihood assets in ensuring sustainable livelihoods of households and sustainable poverty reduction are consistent with the studies of (Cramb, Purcel, & Ho, 2004; Titttonell, Vanlauwa, Leffelaar, Rowe, & Giller, 2005; Ncube, Twomlow, Dimes, Van Wijk, & Giller, 2009; Titttonel *et al.*, 2010).

### **3.7 Livelihood Strategy and Sustainable Poverty Reduction**

Livelihood strategy (LS) denotes steps, action, and processes taken by households or individuals with a view to enhance their livelihoods base, augment conventional earning which in turn shield the households or individuals from poverty and vulnerability to it (Ango *et al.*, 2014; Su & Shang, 2012). In line with that also DFID, (1999) conceives livelihood strategy as the collection of processes and activities that households and individuals employ to enhance their livelihood security, from productive engagements to investment and procreative activities. It has been argued that livelihood assets enhancement leads or influences the devising of a strategy to

broaden and secure the assets, and livelihoods which relate to keeping away from poverty and vulnerability to it (Su & Shang, 2012).

Existing empirical literature on the efficacy of Livelihood strategy to enhance walk away from shock, trends and seasonality suggested that livelihood strategy empowers household to keep a distance from poverty and its effect (Bosongo et al., 2014; Ango et al., 2014; Ng'anga et al., 2011). Furthermore, Lim and Mansur (2015) in a study in Sabah-Malaysia revealed that non-poor households embraced livelihood strategy and diversified into series of activities like agriculture and natural resources activities, formal employment and casual work at stores, selling of perishable goods, and supplies to cities and shopping stores which result into more income thereby enhancing their livelihoods and well-being which enable them to keep away from poverty, unlike the poor who only produce for consumption without other options that can lead them to exit poverty. Similarly Seng (2015) conducted a study in Cambodia and the result shows that households that employed other activities besides agriculture had their livelihoods improved and secured as other sources augment income from agriculture resulting into keeping away from vulnerability to poverty the finding is consistent with the findings of (Reardon, Delgado & Matlon, 1992; Mishra & Sadretto, 2001; de Janvry, Sadoulet & Zhu 2005; Chang & Mishra 2008, Owusu, Awudu & Seini 2011; Olugbire, Falusi, Adeoti, Oyekale & Adeniran 2011; Unmesh, & Narayanan, 2015, Kumo, 2015).

Additionally, Shehu and Abuabakar (2015) conducted a study on non-farm enterprise engaged by farming households in Nigeria and the result of the study revealed that households that diversified into different activities like small-scale business, kiosk for

package water and goods vendoring had their income improved and livelihoods secured than those that only stuck to farm engagement only, this is in line with the studies of (Ellis, 2000; Barrett, Reardon & Webb, 2001; Abdulai & Crolerees, 2001; Woldenhanna & Oskam, 2001; de Janvry & Sadoulet, 2001; Reardon, Stamoulis & Pingali, 2007; Owusu, Abdulai, & Abdul-Rahman, 2011). Similarly, Nasif Ahsan (2014) conducted a study in Bangladesh and the result shows that households which devised a number of non-farm activities like collection of forest resources to augment income succeeded in averting vulnerability and poverty, while those that do not remained vulnerable to poverty and full of risk to livelihoods and could not recover from the shocks of natural disaster the finding is consistent with the result of (Miah, Bari & Rahman, 2010; Rahman, Lund & Bryceson, 2011).

In a related study by Thi et al. (2013) on factors affecting livelihoods of households the result shows that households that diversified from the common source of income which is fishing into farming and aquaculture practice, and borrowing of money to take care of needs and to improve their income to secure livelihoods so as to keep away from poverty and vulnerability. The finding of the study concurs with the study of Oumer and De Neergaard (2011) in which livelihood strategies were found by the result to have made impact on livelihoods of the households that diversified into casual off-farm work, regular off-farm and raising of livestock as well as production of cash crops which are all sources of livelihoods and these helped in economically empowering households to be protected against vulnerability and poverty as their livelihoods are secured, these findings are consistent with the findings of (Uy *et al.*, 2011). Furthermore, in a study conducted by Shuaibu et al (2015) in in Nigeria on coping strategy of households in the flood affected areas the result reveals that food

insecure households adopted a number of coping mechanism such as borrowing money to buy food, to buying food on credit, reliance on family members and friends, limiting food intake and patronizing street food and reducing number of meals consumption, reducing food intake by adults and completely skipping whole day without food, and migrating to areas that are not flood affected for manual jobs and other economic engagements with a view to absorbing shocks of flooding which made them food insecure and vulnerable to poverty, as their means of livelihoods which is farmland has been destroyed as well as assets. This study supports the findings of Lalnilawma and Chowhan (2011) in a study they carried out in India, in which they further revealed that households do resort to selling of livestock and asset to put food on the table and take care of other basic needs of their households.

In a related study by Ng'ang'a et al. (2011) conducted in Mozambique results revealed that poor households were characterized by insufficient food and absence of other means of livelihoods like manual labour, menial jobs, livestock and assets that could be sold to buy food and address other needs of the households as well as enough land for cultivation of food for both subsistence and commercial purposes these findings concurred with earlier studies by (Barret, Bezuneh, Clay, & Reardon, 2005; Olujide, 2006; Kruger *et al.*, 2007; Ansoms, 2008; Babulo *et al.*, 2008; Hahn *et al.*, 2009; Mandere *et al.*, 2010).

However, in a study conducted by Jansen et al (2006) in Honduras, the result reveals that livelihood strategy is ineffective in poverty reduction as it is the availability of livelihood assets that determine households' option of livelihood strategy, and households in the study area do not possess or have access to the assets as such



livelihoods strategy were not effective enough to occasioned poverty reduction. This to some extent contradicts the position of other studies that envisioned poverty reduction through livelihood strategy. In line with the position of Jansel et al (2006) Ng'ang'a et al (2011) findings revealed that unlike other livelihood strategies activities mere crop production alone is not sufficient to curb shocks and vulnerability to poverty and could not secure households' livelihoods, therefore, a combination of earning strategies is more effective and reliable in securing livelihoods and curbing poverty and vulnerability to it.

In a nutshell, literature suggested that adoption of livelihood strategy by households leads to improved income and consumption, food security, recovery from shocks and vulnerability (Ellis, 2000; Barret *et al.*, 2001; Abdulai, & Crolerees, 2001; Woldenhanna, & Oskam, 2001; de Jan vary, & Sadoulet, 2001; Reardon et al., 2007; Owusu et al., 2011).

Although, empirical evidences exist but were mostly located in the realm of natural disaster-prone societies, and being particular to Asia and some East Africa and not in the present area of study coupled with the findings of some researcher about the inefficiency of livelihood strategy to curtail poverty, hence the need to conduct a further study in other contexts empirically. Therefore, based on the above assertions, the present study hypothesizes that:

*H6: There is significant relationship between livelihood strategy and sustainable poverty reduction.*

Conclusively, empirical studies reviewed upon which hypotheses were drawn suggested that access to livelihood assets and adoption of appropriate livelihood strategy enhance and impact on the livelihoods of households and individuals as such lead to well-being and better living condition, and sustainable livelihoods which in the end ensure protection of the households and individuals that accessed the livelihood assets and adopted livelihood strategy from vulnerability for those that are not already poor, while it curbs and ensures sustainable poverty reduction of the already-poor households and individuals as their livelihoods are becoming sustainable and on the track of being secured.

### **3.8 Government Intervention as Moderator**

Government intervention is a term usually employed to mean an aggregate response, actions and activities that government does or take into consideration, with a view to addressing issues or problem in the socio-economic and political realms, to better the condition of life of the people, particularly the poor (Ibrabim, & Alam, 2016; DFID, 1999). To Loewen (2009) government intervention generally means the involvement or coming into action by the government in terms of policies or programs that aimed at socio-economic and political empowerment of the poor in the society, and in some specific circumstances activities aimed at addressing a particular identified socio-economic problem being faced by the people. It has been asserted that, institutions, processes, and structures influence access to livelihood assets in the process of accomplishing livelihood outcomes which constitutes well-being, income increase and better standard of living (DFID, 1999, 2001).

Empirical literature suggested that, government involvement in the process of poverty reduction could enhance livelihood assets (Ibrahim & Alam 2016; Kamaruddin & Baharuddin, 2015; Kumo, 2015; Kamaruddin & Samsudin, 2014), but the studies have not explored more on government intervention as a moderating factor in ensuring livelihood outcomes to which poverty reduction is the core. Additionally, results of a study conducted by Ibrahim and Alam (2016) in Malaysia revealed that government intervention in production of paddy through giving incentive to paddy farmers and subsidy on fertilizer and seeds improved the income of paddy farmers thereby enhancing their livelihoods and well-being which could lead to keeping away from vulnerability to poverty and possibly reducing it.

In essence government intervention has not been explored more by empirical studies, thus, the need for an empirical studies to ascertain the moderating efficacy of government intervention towards access to livelihood assets, for instance, provision of infrastructure (roads, hospital, electricity) which form physical capital, law concerning land tenure and ownership (Natural asset), laws and policy on employment, education and skill acquisition programs (human capital) regulatory laws and enactments by the legislature on civil liberty organizations (social asset) and macroeconomic policies, microfinance programs policies (financial asset) which all together are determined by level of institutional activities, structures and process, therefore influence access to livelihood asset, which in turn affect livelihood outcome and poverty reduction (DFID, 1999; 2001, Krantz, 2001).

Consequently, it suffices to say that, for livelihood asset to impact on poverty reduction there has to be an intervening effect or influence of government intervention.

Basically, government intervention as a moderating variable is another contribution of the study, therefore looking at the above assertions and suggestions by the literature, the present study, therefore, hypothesizes that:

*Government intervention moderates the relationship between access to livelihood assets and sustainable poverty reduction.*

NOTE: The hypothesized moderating effect captures  $H_7$ ,  $H_8$ ,  $H_9$ ,  $H_{10}$ ,  $H_{11}$ ; for interaction terms of human asset and government intervention (HA\*GI); social asset and government intervention (SA\*G); physical asset and government intervention (PA\*GI); financial asset (FA\*GI); and natural asset and government intervention (NA\*GI) respectively.

On the Livelihood strategy (LS) and sustainable poverty reduction relationship through the moderating effect of government intervention, which in the context of the present study, policies and programs of government would be deemed as government intervention, DFID (1999) posited that, type of assets at the disposal of a households or individual determine what livelihood strategy is to be adopted or devised, and that accessibility to livelihood assets is influenced by governmental actions for instance construction of roads, provision of safe drinking water and electricity (physical asset), land use act which affects land use and its ownership (natural asset), and microfinance policies which affect loan (financial asset), which in the final analysis shape or influence poverty reduction. Empirical studied suggested the ability of government to help in livelihood asset accumulation (Akudugu, 2011; Adunga, 2013; Shehu & Abubakar, 2015), which in turn determine livelihood strategy that leads to increased income, food security, and thus poverty reduction. Existing empirical literature has not adequately captured the moderating effect of government intervention between

livelihood strategy and sustainable poverty reduction, which explained the need for more empirical study, particularly in the study area, which the present study explores more.

It is on this note that, the present study presumes the moderating effect of government intervention on adoption of livelihood strategy in the process of reducing poverty, and thus hypothesizes that:

*H<sub>12</sub>: Government intervention moderates the relationship between adoption of a livelihood strategy and sustainable poverty reduction.*

Sequels to that, the study hypothesized the pattern of the relationships based on the research questions developed, and the study explored empirically the moderating effect of government intervention on the relationship between livelihood strategy and sustainable poverty reduction.

What has become obvious from the discussion in the chapter is that the process of reducing poverty on sustainable basis depends on sustainability in terms of access to all the livelihood assets, and adoption of livelihood strategies to augment the conventional sources of livelihoods and the appropriate intervention or support by the government toward ensuring consistent and unhindered access to livelihood asset, while at the right time supporting the households and individuals to adopt and diversify strategies to secure livelihoods so as to avert poverty and vulnerability to it.

### **3.9 Past Poverty Reduction Efforts in Nigeria**

In reaction to the alarming poverty trend in Nigeria, different intervention policies and programs were developed and pursued by respective governments. Efforts towards

combating poverty in the country began at the beginning of Nigeria's attainment of independence. These were propelled through various measures, categorized as the pre-SAP, SAP and post-SAP eras (Oshewolo, 2011). National Development Plans designed as medium through which poverty was to be reduced, emphasized on, the real income of the average citizen, more even distribution of income among individuals, and socio-economic groups (Ukpong, 1999). The 3<sup>rd</sup> National Development (1975) centered on development; that development should trickle evenly in all geographical areas so as to ensure overall development of the country. The Military regime of General Yakubu Gowon (1966-1975) launched the National Accelerated Food Production Program (NAFPP) in 1972, although no tangible result was gained. The motive was to address the neglected position of agricultural sector, through policies and program of government so as to revamp productivity and make agriculture not only important but an integral sector of the Nigerian economy (Oshewolo, 2011).

Similarly, in 1973, the Federal Government created Agricultural Credit Guarantee Scheme Fund (ACGSF) mandating the Nigerian Agricultural and Cooperative Bank (NACB) to implement. 1976 was hallmark for rural electrification as it first surfaced in the development document of Nigeria (Adawo, 2011). In 1976 the Military government of General Olusegun Mathew Okikiola Obasanjo, initiated Operation Feed the Nation (OFN) a program designed to enhance food production and to trickle down development to the rural areas. However, OFN failed to meet as corruption and inefficiency, misplacement of priorities amongst others deluded it. Similarly, with the emergence of a democratically elected Government, President (Alh) Shehu Usman Aliyu Shagari's administration (1979-1983) came up with the Green Revolution

Program, which was envisaged to among other things, curtail the rising cost of food importation and increase local production of food to address hunger and starvation, and to bring back on track agricultural sector into the main fold of Nigeria's economy. Unfortunately, like previous programs, Green Revolution as it was popularly called, failed to realize its objectives, as it only served insignificant few in the bureaucracy, political parties, allies and cronies to the detriment of the Nigerian populace and particularly rural dwellers and genuine farmers who were at the heart of the objective poverty reduction effort (Oshewolo, 2011).

The General Muhammadu Buhari's regime (1983-1985) introduced the Go Back to Land Programme, which began to yield positive result in food production, but short lived by a military coup which overthrew Buhari's military government. On coming to power General Ibrahim Badamasi Babangida in 1985, his Administration came with series of programs, envisaged as steps further towards poverty alleviation in Nigeria, via Structural Adjustment Programme (SAP). Notwithstanding the resolve by the government to address the severe economic crisis in Nigeria in the early 1980s, the implementation of SAP sapped the people and worsened living condition in Nigeria, substantially, the downtrodden who formed the vulnerable group. To address that, efforts were made which resulted in designing and implementation of a myriad of poverty alleviation programs within the life frame of the administration from 1986 to 1993. A glimpse of some achievements recorded by administration in terms of poverty alleviation, rural development, although with some criticisms, will certainly explain the commitment of the administration towards poverty alleviation. For instance, the Directorate of food, roads and rural infrastructure (DFRRI) was able to address some

basic needs such as food, shelter, potable water which to some extent brought succor to the rural populace (Central Bank of Nigeria [CBN], 1998).

Furthermore, DFERRI constructed some 278,526 km of roads throughout Nigeria, particularly in rural areas. In the area of power, some 5,000 rural communities benefited from rural electrification program (CBN, 1998). These concerted efforts towards rural development, undoubtedly, paved the way for the evolution of basic infrastructure that can enhance the growth of agro-allied and small-scale enterprises in rural areas which are important in livelihoods attainment. Similarly, DFERRI occasioned improvement in food production, related to that, a significant rise in agricultural output was witnessed as indicated by Agricultural production index between 1986 and 1993 (CBN, 1998). Notwithstanding, DFERRI was labeled as a failure for its objectives were defeated by among others, lack of standards for project harmonization and effective mechanisms for coordination among the three tiers of government, and between DFERRI and other levels of government (CBN Bauchi Zone & Enugu Zone, 1998). The inability of DFERRI to keep on doing the good work it started made it wither away.

Another important institution put in place by the Babangida's Administration was the national directorate of employment (NDE) whose main objectives were to serve as the mechanism for employment generation which includes identifying, designing and implementing programs aimed at combating mass unemployment, and to articulate policies aimed at creating job opportunities with employability potentials. This is in consonance with the fact that poverty manifests itself in the form of joblessness. To ensure that, four main programs were brought forward which not only created jobs but



enhances the productivity and income-earning potentials. The programs were, vocational skills development program (VSD), the special public works program (SPW), the Small-scale enterprises program (SSE) and the agricultural self-employment program (ASEP) (CBN, 1998; Oshewolo, 2011).

Notwithstanding, the zeal of the government to alleviate poverty and create employment, a study conducted in Kaduna State revealed that NDE has not impacted so much on job creation and employment generation, that of the 4,816 graduates that availed themselves to the NDE between 1987 to 2006, only 1,993 were able to be engaged by NDE within the spanned of its 19 years of existence (Oshewolo, 2011).

Another important milestone in the fight against poverty in Nigeria was the re-emergence of democratic governance in 1999. The new Administration under President Olusegun Obasanjo realized that the rate of poverty was high with an estimated 70 percent of Nigerians as poor and languishing in poverty. The government was so keen in addressing that as such launched a poverty alleviation program (PAP) in 2000, with a view to creating jobs for the unemployed in Nigeria such as menial jobs via direct labor in the areas of vegetation, sanitation, patching of potholes and general maintenance of public utilities (Oyemoni, 2003). Not satisfied with the performance of poverty alleviation program as reported by Professor Anglo's committee that, PAP was shrouded by corruption, excessive politicization e.t.c. The Federal government rebranded the program to National Poverty Eradication Program (NAPEP) in 2001, with a projected financial cost amounting to ₦ 470 Billion in the National budget, but was able to get an approval from the National Assembly to commit ₦10 Billion to finance the poverty alleviation program (Ogwumike, 2002).

NAPEP was envisaged to ensure an all-encompassing effort towards fighting poverty in Nigeria amongst others.

Accordingly, to achieve that, a range of four comprehensive programmes/schemes were designed and pursued which include; i- Youths Empowerment Scheme (YES) which was designed to inculcate skill in the youth through capacity building programmes like welding, carpentry equipment fabrication and entrepreneurship etc; ii- National Resource Development and Conservation Scheme (NRDCS) whose main objective was to entrench the culture of exploiting the natural assets like water for irrigation purposes, tapping of mineral resources and proper conservation of land and light mining or exploration of mineral resources; iii- Social Welfare Services Scheme (SOWESS) with intended objective of dealing with illiteracy, civic education, cheap public transport system, orientation, agricultural inputs subsidy etc; iv- Rural Infrastructure Development Scheme (RIDS) which sought to guarantee rural electrification, clean water supply, feeder roads to ease transportation of agricultural farm produce (Okoye & Onyukwu, 2007).

Furthermore, the global alliance to end poverty was a catalyst for the designing of an indigenous framework for poverty reduction and development in Nigeria, through the conception, designing and implementation of what is known National Economic Empowerment & Development Strategy (NEEDS) by the Administration of Chief Olusegun Obasanjo in 2004. The ideals of NEEDS were premised on the Millennium Development Goals (MDGs) , which had at its core priorities, poverty reduction, education, sanitation, environment, energy, and health, with about US\$ 1 billion expended since 2006 (United Nations Development Programme [UNDP], 2007). Note

that, NEEDS was packaged to among other things to accelerate privatization, deregulation and liberalization, reforms in the fiscal and monetary policies, infrastructure development, entrench transparency, accountability, anti-corruption crusade and promote good governance (Adogamhe, 2007). The NEEDS framework was extended to the 36 States that make up the Nigerian Federation and 774 local governments across the States in form of SEEDS and LEEDS respectively. To actualize the objectives of NEEDS, civil liberty organizations, the legislature, development partners and private sector were all brought on board to ensure that NEEDS as a strategy was comprehensive, with every stakeholder being encouraged to actively be involved in the quest to eradicate poverty in Nigeria (Ekpe, 2011).

Similarly, the Nigerian Government in conjunction with the international monetary fund (IMF) was outstanding in elucidating the attainments of the reform agenda (NEEDS) on the economy, which was before dominated by the government as the dominant player. The objective of the reforms centered on macroeconomic stabilization with a view to strengthen the economy through improving budgetary process and implementation, which paved the way for sustained economic diversification and non-oil sector growth (Okonjo-Iweala & Osafo-Kwaako, 2007). The reform was successful in cutting down government expenditure and jerked up gross excess crude savings which totaled about \$6.35b at the end of 2004 and about \$17.68b by the end of 2005 (CBN, 2006). Similarly, the external reserves grew from 12.2 percent to about 23 percent that is, from US\$7.68 billion in 2004 to US\$43 billion in 2006, (IMF, 2007). These developments in the economy were envisaged to lead towards fighting poverty and ensure livelihood security in Nigeria, as foreign direct investment led to the growth of the Nigeria's economy to about 6.6 percent from

(2004-2006) as against the designated target of 6.0 percent (Bambale, 2011). The growth of the economy made it possible for the wages of the civil servant to be increased in a consolidated way, with fringe benefits and other entitlements like housing and car allowance (Ogbo, 2006).

Notwithstanding, the performance of NEEDS was put to question, as problems similar to those that affected the previous poverty-fighting policies and programs manifested. These include lack of focus about the target (poor people), policy instability; improper coordination of programs, poor budgetary system, poor management, lack of accountability and transparency, poor due process, corruption and absence of sustainable framework. It has been argued that, NEEDS instead, compounded poverty in Nigeria than reducing it, as it failed to provide and develop basic infrastructures needed in reducing poverty which led to the rise of Nigeria's human poverty index (HPI) from 34.0 percent to 38.8 percent, between 2001-2007, making Nigeria to be ranked 114<sup>th</sup> out of 135 selected countries, with vicious deprivation in education, health, quality of life and general well-being (UNDP, 2009). Similarly, in a research conducted by Gentilini and Webb (2008) about efforts employed in combating global poverty found that, Nigeria was seriously behind, using parameters of poverty-hunger index (PHI), with 0.156 values, which translates into slow or low movement to the attainment of the Millennium Development Goals (MDGs) to which poverty reduction is a core objective.

Similarly, the emergence of Alhaji Umaru Musa Yar Adu'a as the President of the Federal Republic of Nigeria on the 29<sup>th</sup> of May, 2007 brought to the fore another program (The 7 points Agenda) aimed at addressing some daunting challenges in

Nigeria, with poverty reduction taking the center stage. The seven (7) points were; power & energy; food security; wealth creation; transport sector; land reforms; security and education (Oke, Oluwasuji & Simon-Oke, 2011). Unfortunately, the brain behind the Seven (7) points agenda could not live to see its realization, as death called on him on the 5<sup>th</sup> of May, 2010. The demise of Yar Adu'a was a devastating blow to the Seven (7) points Agenda as his successor President Goodluck Ebele Jonathan could not continue with the Agenda and instead came with his own program tagged Transformation Agenda in 2011, although Jonathan was Nigeria's President until 29<sup>th</sup> of May, 2015. The government was reported to have created 75,640 entrepreneurial skills acquisitions for graduates of tertiary institution and artisans. 139,371 unemployed candidates took part in the skill acquisition, vocational, technical and agricultural trades (Alao & Alao, 2013).

Similarly, the transformation agenda was reported to have made some attainments in the education sector with the launching of almajiri education programme in Sokoto State, Girls Education Programme in Adamawa State, Yobe State, Zamfara State, Nasarawa State, Ebonyi State, Ekiti State, Delta State and Akwa Ibom State, as well as approved 9 new private universities and federal universities to boost tertiary education. It was further revealed that, 105 blocks of 2, 3 & 4 classrooms, 2 examination halls, 4 community libraries, 4 generator houses, 9 computer centers, 3 boreholes and 15 toilets, were constructed across 15 States of the federation via the MDGs, with additional approval for the establishment 135 innovation and vocational enterprise institutions to encourage technical/vocational education and training (Gyong, 2012). The transformation agenda of President Goodluck Ebele Jonathan could be said to have articulated policies and intentions to overhaul the Nigeria State,

and particularly, the in-road made in education and employment generation, as buttressed above.

However, the President Jonathan's Transformation Agenda was criticized for top-bottom approach, basing its design and implementation on the alien ideas without consultation and involvement of the target and immediate stake-holders (i.e,) masses and civil society groups (Gyong, 2012).

Table 3. 1

*List of Poverty Reduction Programs Implemented in Nigeria (1960 to 2011)*

YEAR	REGIME	PROGRAMME(S)	OBJECTIVE(S)
1962- 1968	Nnamdi/ Balewa	First National Development plan	Agriculture
1970-1974	Yakubu Gowon	Second National Development plan	Self-reliant Nation
11975-1980	Yakubu Gowon	Third National Development plan	Integrated Rural Development, through NAFPP
1981-1985	Shehu Shagari	Fourth National Development plan	Rural Infrastructural Development
1985-1990	Ibrahim Badamasi Babangida	Post Fourth National Development plan	Rural infrastructure via DPRRI, NDE, BLP
2001	Olusegun Obasanjo	National Poverty Eradication Programme(NAPEP)	Poverty Eradication
2004	Olusegun Obasanjo	National Economic Empowerment & Development Strategy (NEEDS)	Reform, Poverty Reduction, Infrastructure
2007	Umaru Musa Yar Adu'a	7 Points Agenda	General welfare of Nigerians and Economy
2011	Good luck Jonathan	Transformation Agenda	Welfare, economic & Job creation

Source: Simulation by Researcher

However, despite these series of programs brought forward by the Nigerian governments from independence to date, the issues of securing livelihood and eradication of poverty in Nigeria has become a worrisome affair (AEO, 2012), although there were instances within the period when poverty rate galloped down 42.7% 1992 and 54.4 in 2004 respectively (Anyanwu, 2012). Similarly, MDGs report

about Nigeria's ability to meet the target of halving the number of poor in Nigeria has shown that poverty incidence is on the increase in Nigeria with 61.20 percent in 2010 (Millennium Development Goals [MDGDs], 2013).

Similarly, the National Bureau of Statistics (NBS) put poverty prevalence for 2010, using USD 1 per (poverty line) day basis, at 61.20 percent, which revealed that the country suffered a relapse in its efforts towards meeting the target of halving the percentage of its poor to 21.40 percent by 2015 (NBS, 2010). In that light, World Bank (2011) presented the following data on Nigeria for 2011 as follows: Population (millions) 162.3, Total fertility rate 5.7, Infant deaths per 1,000 live births 89, Maternal deaths 100,000 live births 840, Girls aged 20-24 married by age 18 at 39 percent, HIV/AIDS prevalence 3.6 percent, living below US \$2 per day 84 percent. These have clearly shown that the incidence of poverty in Nigeria (to which Sokoto State is a constituent element) has an alarming rate of poverty despite efforts made to tackle it. However, poverty incidence in Nigeria remains high defying efforts aimed at reducing the rate of poverty in Nigeria and Sokoto State in particular (OPHI, 2015).

In a similar study, the United Nations Children Fund [UNICEF] (2013) asserts that, the incidence of poverty in Nigeria, despite resources committed over the years, remains alarming with 54 percent of the total population as poor, living below the poverty line and out of which 43 percent live in the urban area, while 64 percent live in the rural area. This sad development was further explained by OPHI (2015) study in which incidences of poverty in Nigeria and Sokoto state were buttressed with 53.3 percent of the total population in Nigerian living in poverty, while Sokoto State has an incidence of 85.3 percent of its total population living in poverty. Therefore, it can be

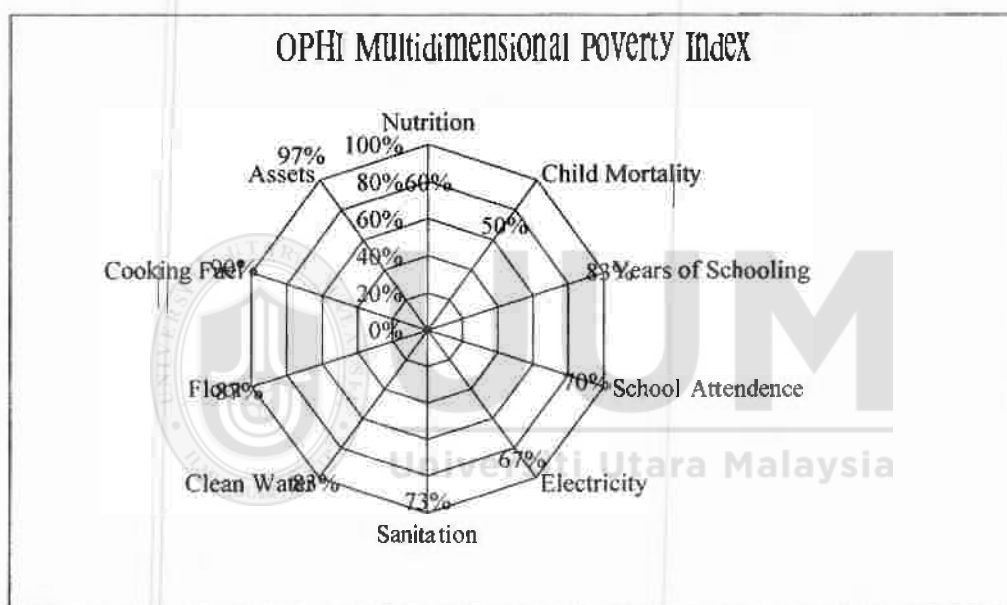
understood that despite efforts made by government in curbing the menace of poverty in Nigeria the scourge is still so alarming, and this may not be unconnected with the assertions that poverty reduction efforts in Nigeria over the years were shrouded by poor policy design and implementation, corruption and mismanagement of resources, top-down approach and politicization of the poverty reduction programmes (Gyong, 2012; Oshewolo, 2011; Garba, 2006). Therefore, it can be concluded that poverty incidence in Nigeria continue to be high notwithstanding the efforts made at eradication/reduction of the menace by government in Nigeria.

### **3.10 Overview on Sokoto State Poverty Incidence**

A recent study by OPHI (2015) reveals a disturbing image of the incidence of poverty in Sokoto State from a multidimensional perspective which has been explained by the information below. OPHI used multidimensional poverty index of 3 dimensions and 10 elements employed to measure poverty. The multidimensional index is an aggregate of poverty indicators from different dimensions that explain the nature of poverty in a given society. In terms of health OPHI found that Sokoto State has up to 63 percent of the population that lack required nutrition and a child mortality rate of 50 percent signifying that children die at a tender age from diseases. On education OPHI found Sokoto state to have as low as 17 percent in terms of years of schooling and only (30 percent) children attend school. Other indicators of the problem of poverty in Sokoto State are electricity with 67 percent having no access to it, 73 percent with poor/lack of access to good sanitation facility, while poor in terms of good drinking water stands at 83 percent, and 87 percent lack good flooring, 90 percent lack cooking oil, whilst 97 percent lack assets. This has demonstrated the nature and dynamics of poverty not in Sokoto State only but in general terms.



Nutrition	60%
Child Mortality	50%
Years of Schooling	83%
School Attendance	70%
Electricity	67%
Sanitation	73%
Clean Water	83%
Floor	87%
Cooking Fuel	90%
Assets	97%



**Figure 3.1** Pentagon of Poverty Indicators

Source: OPHI (2015)

In line with OPHI (2015), and particularly on living standard dimension and electricity indicator Emodi and Boo (2015) revealed that Sokoto State is in the wave of energy poverty which further can be seen as the contributing factor to poverty and livelihoods insecurity, since electricity that could be used to establish small and medium businesses as livelihood strategies is lacking, this further worsen the problem as a component of critical infrastructure is missing.

Table 3. 2

*Accessibility to Sources of Energy (Percent)*

Year	PHCN	Rural Electric	Generator	PHCN/Gen	R.E/Gen	Solar	None
2007	35.7	0.3	0.7	0.8	2.3	0	60.3
2008	29.8	0	0.2	0.3	0.2	0	69.3

Source: Emodi and Boo (2015)

This energy related poverty affects access to physical asset, livelihood strategies (frozen food business, selling of soft drinks) as socio-economic activities which are linked to livelihoods earnings, employment generation, small scale and medium businesses which in turn breed poverty as asserted by (Rai, 2004). In line with that, Akanbi (2015) posited that there is correlation between incidence of poverty and level of physical infrastructure development (physical asset), that is countries or societies with effective physical infrastructure tend to have poverty reduced. Physical infrastructure is measured by three (3) indicators physical infrastructure index: a. Electricity; b. Roads network and; c. Telecommunication) which constitute physical asset (DFID, 1999).

In terms of material health (human asset) and particularly malaria which has 97 percent risk amongst Nigerians, North West which Sokoto State is part of has prevalence rate of 49.4 percent (which affects human asset). It is important to note that, malaria accounts for 300,000 deaths and contributes 11 percent of the total maternal mortality (United State of America [USA] Embassy-Nigeria, 2010). Regarding infant mortality there is 900 deaths in every 100,000 live births which is above national average and 95.3 percent of reproductive age 15-49 women deliver at home (lack access to physical asset, i.e., health facility) (Shamaki & Buang, 2014), while 60 percent because of either lack of financial resources, lack of health facility, drugs, personnel or long distance to the nearest health facility (Shamaki *et al.*, 2013a). These have negative effect on

human asset since health care facilities (physical asset) are far away and in some cases non-functional and non-existent. while in terms of maternal health and particularly, birth attendance by skilled personnel in Sokoto State only 10 percent of women have access being a result of poor access to financial asset and physical asset, compared to Anambra State 90 percent, Lagos State 80 percent, Abia State 83 percent, Enugu State, 90 percent and Imo State, 92 percent, and infant mortality rate of 24 percent, which could be attributed to the high incidence of poverty (lack of access to livelihood assets) in the state (NBS, 2015). Similarly, Sokoto State has its own share of unemployment menace which has been contributing to the incidence of poverty as shown in Table 3.3 below.

Table 3. 3  
*Unemployment Percentage in Sokoto State (1996-2011)*

*Year	2002	2003	2004	2005	2006	2007	2008	2009	2010/11
Percentage	4.1	4.9	4.5	4.1	6.4	12.1	22.4	22.4	24.4/17.9
**Year	2007		2008		2009		2010		2011
Percentage	12.3		5.9		22.4		15.9		17.9
***Year	1996		2000		2005		2010		
Percentage	8.0		16		7.0		38		

Source: Aiyedogbon and Ohwofasa (2012)\*, Innocent (2014) \*\*, Nyong (2013) \*\*\*

Note: The above table is harmonized to include the data from the three studies as identified with asterisk signifying first study (2002-2011)\*, second study (2007-2011) \*\*, and third study (1996-2010) \*\*\* respectively.

Similarly, in a study by Abdullahi, and Abdullahi (2013) on private sector, and particularly small and medium enterprises (that could have helped generate employment) in North West (Sokoto, Kebbi, Zamfara, Katsina, Kaduna, Jigawa and Kano states) are lacking, the few ones available were challenged by low level of entrepreneurial knowledge, skills, and experience by the owners which affect human asset, lack of government support (i.e.,) financial/technical (intervention), poor capital

base (poor financial asset). These have made employment generation and opportunities a mirage.

Related to that, is the issue of crime surge (social asset) which is a product of unemployment and poverty. The study conducted by Usman, Yakubu and Bello (2012) on crime rate revealed that, despite high poverty incidence, Sokoto State has low rate of crime and criminality as shown (murder 32.25; GHW, 33.5; assault 28; robbery 27.25; theft-stealing 39.875; store breaking 4.875; false 33.5). Although the study attested to low rate of crime, it has further faulted the police for poor crimes record.

However, to address the menace of poverty in Sokoto State Shehu, Abdullahi and Aliero (2012) observed that, the international fund for agricultural development (IFAD) through its activities in the Sokoto has reduced rural poverty in the selected local government areas of its operation. This was through its poverty reduction intervention programs activities towards rural dwellers in form of financial assistance, skills acquisition, and socio-economic empowerment. However, despite numerous national programs were devised, designed and implemented at the national scale, unfortunately issue of poverty and its incidence continue to rise in Nigeria, without exception of Sokoto State (African Economic Outlook [AEO], 2012).

It is therefore based on the above that, the present study deemed it important and investigated and sought for solution to the shocking incidence of poverty in Sokoto State using the sustainable livelihoods approach (SLA) which explain poverty within the context of access to livelihood assets. Similarly, the study also envisioned strategies to be employed by the poor to enhance livelihood security within the study

area, while at the same time effort was made by the study to ascertain if government intervention enhances access to livelihood assets in Sokoto State which is expected to lead to sustainable poverty reduction. The reason why the present study adopted livelihood assets-based approach (SLA) poverty reduction perspective is because studies on poverty in Sokoto State using SLA are lacking, and those which attempt to explain poverty in Sokoto were uni-dimensional adopting income as the measure of poverty, which cannot provide comprehensive account of what poverty is all about (Sen, 1986).

Similarly, empirical studies on livelihoods asserted the influence of access to livelihood assets in promoting well-being and livelihood security as well as coping with its vulnerability. The study of Kamaruddin and Baharuddin (2015) emphasized the importance of assets (physical asset, financial asset, and human asset) towards income earnings. Seng (2015) in his study on factors influencing food intake in Cambodia asserts that access to human asset and physical asset affect the food intake capacity of households. Similarly, another empirical study by Lim and Mansur (2015) in Malaysia affirms the efficacy of livelihood assets towards improving well-being and poverty reduction. Others empirical studies that posited the role of livelihood assets in reducing vulnerability, shocks and poverty are (Kumo, 2015; Kamaruddin & Samsuddin, 2014; Ahsan, 2014; Oumer & Neergaard, 2011). While other studies opined that lack of asset breeds poverty, expose households to vulnerability and make livelihoods insecure (Ellis & Mdoe, 2003; Ellis & Freeman, 2004; Crab *et al.*, 2004).

Therefore, considering the assertions of the previous empirical studies, the present study investigated poverty in the study area within the context of SLA, although

livelihood assets were emphasized by all the empirical studies, the difference between the present study and the previous ones is that, the previous ones centered on income, food consumption, effect of climate change, natural disaster (drought, flood), while in terms of unit of analysis (farmers, fishermen, women farmers and disaster-affected households were considered), the present study examined the impact of livelihood assets and livelihood strategy toward sustainable poverty reduction, while also assessing the moderating influence of government intervention on the relationship between access to livelihood assets, livelihood strategy and sustainable poverty reduction, while the units of analysis were the sampled households heads from the general population.

### **3.11 The Research Model (Framework)**

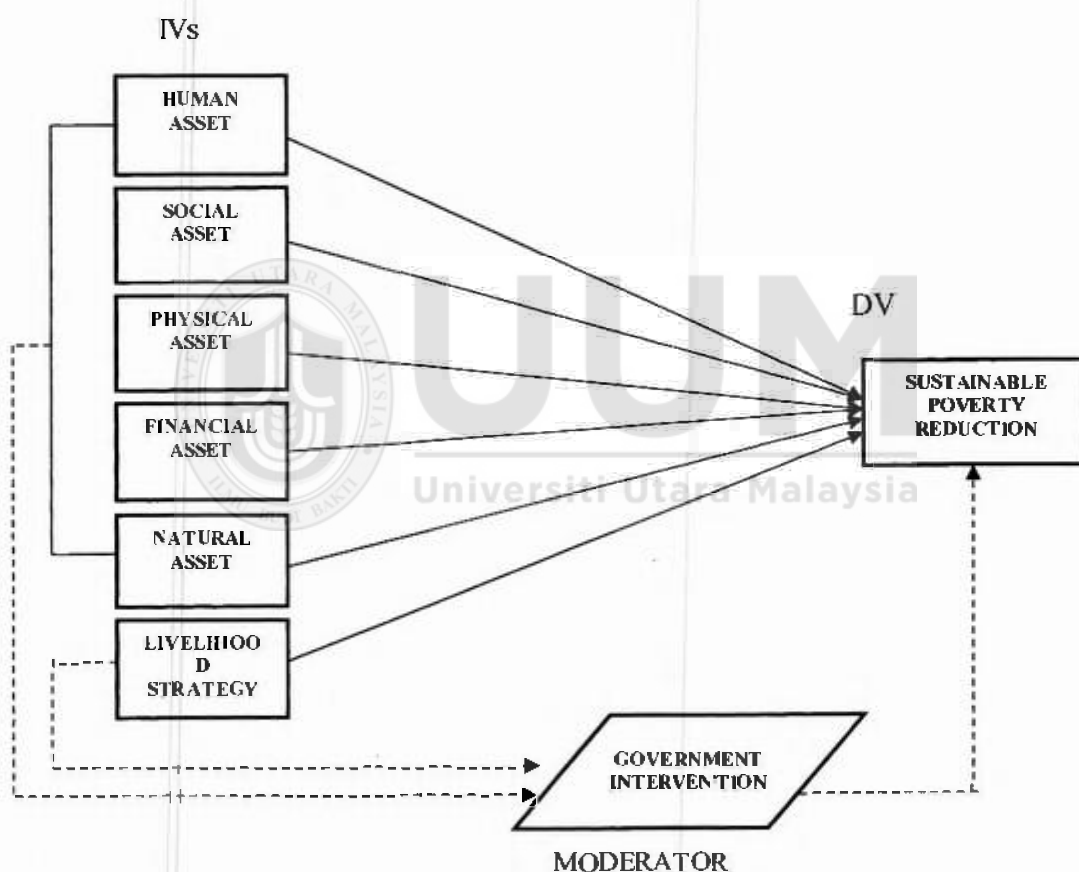
Researchers on livelihoods and poverty have been, over the years, developing theories and postulations about what constitutes to be poor and deprived, as poverty has become a worrisome nightmare that requires a collective action for it to be tackled. Different theories or approaches were developed to explain what accounts for poverty or deprivation, for instance, individual effect postulation (Rainwater, 1970); cultural factor (Lewis as cited in Kurtz, 2014; Gramsci, 1971); structural defect (Davies & Moore, 1945); geographical effect assumption (Acemoglu *et al.*, 2002); and interdependence (society-individual) thesis (Bradshaw, 2000). These were all developed to explain what breeds poverty in the society. Similarly, different measurements were developed to bring the picture of what it means to be called poor which ranges from (income/consumption expenditure) Barrington (1997), Basic needs (Maslow, 1943; Wisor, 2012); to capabilities (Sen, 1979; Nussbaum, 2000); and multidimensional perspective (Alkire & Foster, 2007, 2009). These measures

contributed immensely to the existing literature on poverty and development studies (Wisor, 2012).

Moreover, the quest for more a comprehensive explanation of what constitute poverty and a solution led to the emergence of a more popularized framework for understanding, study and analysis of poverty that put the poor at the core of its objective referred to sustainable livelihoods approach (Chambers & Conway, 1991; DFID, 1999; Krantz, 2001). The assumption of this approach is that sustainability of livelihoods or otherwise defines what constitutes poverty and provide a framework for it to be tackled. Livelihoods encapsulate assets (resources) and capabilities which households and individuals must access and acquire, processes and activities (strategies) for crafting livelihood end meets, which come in form of outcomes (poverty reduction) through increased income, food security, and assets accumulation (Scoones, 1998).

This perspective conceived being poor to mean the inability to access and acquire livelihood assets (human, social, physical, financial and natural) which to together empower households and individuals to stay away from poverty and vulnerability to it, thus, poverty means lack of basic livelihood assets (Newton, 2007). DFID (1999) developed a framework that further explains what could be done and how it could be done to fight and reduce poverty on sustained basis. The mechanism explains the fundamental importance of having access to assets, the essence of livelihood strategy, the effect of institutions, processes, laws, and policies (intervention) which altogether influence the attainment of sustainable livelihoods, and in turn occasion poverty reduction. The basic argument of the present study is that understanding and studying

poverty incidence in the context of the study could be explained and understood from livelihood assets theorization, thus the study employs sustainable livelihood approach. Therefore base on the relevant literature reviewed, the framework for the present study is shown in Figure 3.2 below.



*Figure 3.2 Research Model (conceptual framework)*

### 3.12 Summary of Chapter

In summary, the chapter dealt with the review of relevant empirical literature concerning the variables of the study, specifically, human asset, social asset, physical asset, financial asset, natural asset and livelihood strategy on one hand, and



government intervention and sustainable poverty reduction on the other hand. In essence it dealt with exploring the relationship between the independent variables, the dependent variable and the moderating variable. Accordingly, hypotheses were developed based on the literature reviewed, and lastly the research model was developed indicating the relationship between the variables of the study and its direction.



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## **CHAPTER FOUR**

### **METHODOLOGY**

#### **4.1 Introduction**

In the present chapter, the researcher discusses the most suitable methods used in conducting this study. After due consideration, this study opted for the most proper research design and conducted this study which adopted survey design. This chapter deals with study population and its sample, the adapted instruments as well as the developed instruments. The chapter also presents the validities and reliabilities of the measurements, and also the result of the reliability test through a preliminary test (pilot study) was shown. It further captures the steps in the data collection process. Lastly, the chapter highlights on the steps followed in conducting the preliminary analysis.

#### **4.2 Research Design**

The notion of research designs simply entails path or plan which guide the researcher on how to go about collecting data, what type of data to collect, from whom to collect data and how to go about analyzing the data in conducting a research (Zikmund, 2000; O'Sullivan *et al.*, 2003). This implies that a research design is a guide that shapes the perception and understanding of the researcher on the kind of data that should be collected, in what way and the how of its analysis (Creswell, 2013).

### 4.3 Quantitative Design

The present study adopted the quantitative approach, owing to the assumption of the approach that, social reality exists in quantities and as such can be best understood when measured and explained in numerical terms. To Aliaga and Gunderson (2000), quantitative research methodology has the potency to explain issues or phenomena in numerical terms or with numerical data/information which could be analyzed using statistical description. In line with that, Adamu (2006) stressed that quantitative research approach is suitable or proper in studies with quantifiable measures of variables which involve generating or formulation of hypotheses and testing them whose results could then be used to infer from specific term to a general one (from sample to general population). It has been further posited that quantitative approach has viability towards the generalization of findings, the capability to predict research outcome, and its power of providing comprehensive accounts of the causal relationship between variables (Tashakkori & Teddlie, 1998). Nonetheless, the appropriateness of the research design must be robust and effective for the use of a research in collection, measurement, and analysis of the collected data derived from questions of the research which are based on the research problem.

Accordingly, this study used quantitative approach and evaluated the direct correlations between human asset (HA), social asset (SA), physical asset (PA), financial asset (FA), natural asset (NA), livelihood strategy (LS) and sustainable poverty reduction (SPR), as well as the moderating effect of government intervention (GI) on the correlation between predictors (IVs) and criterion (DV) variables. The reason here being that the purpose of this research is testing the hypotheses as it was designed to evaluate the impact/effect of the predictor variables (IVs) on the criterion

variable (DV), while on the other hand the moderating or interacting effect which possibly may influence the relationships. Specifically, studies whose nature is designed to test hypothesis usually describe the manner or pattern of specific relationships or in some way explain variation among group-set, or individuality of multiple elements in a specific state of affair (Sekaran & Bourgie, 2009). Similarly, although there are other forms of the quantitative approach, the current study used survey which is good for use where the issue under study or investigation cannot be observed directly. In this form of quantitative approach usually questionnaires or interviews are employed to collect data/information from a sample within the general population. A Survey could either be cross-sectional or longitudinal (Adamu, 2006), and in respect of the present study descriptive survey was adopted with the purpose of explaining causality between the variables of this study in terms of what causes what (i.e., X variable causes Y variable).

According to Sapsford (as cited in Gray, 2004), a survey is seen as a comprehensive numerical description of a population, a concise plan or an accurate measurement of potential. It involves the systematic gathering of data either using interview, questionnaire or observation method. This further suggests that survey studies are scientific in nature, as issues or social problems can be subjected to the tool of scientific analysis. The fundamental characteristic of a survey is the opportunity to select sample while efforts are made towards standardization, and instruments of data collection are made error free.

Survey has been categorized into (2) two according to Gray (2004), analytical and descriptive surveys, therefore in the context of the present study descriptive survey

was adopted and data for the study were gathered using questionnaires within the sampled population and precisely households' heads which were unit of analysis of the study. The justification for choosing descriptive survey is based on the premise that;

“Survey of this kind has often been used to identify scale and nature of social problem, including poverty, crime and health related issue. Hence, descriptive survey can be the source and stimulus for policy changes and social action (Gray 2004, p. 100)”.

Similarly, the survey used by this study was cross-sectional one, and the data for the study were collected from the sample population within one stipulated period (once). This is because unlike longitudinal survey, cross-sectional survey is simple, cheap in terms of financial resources and affords the opportunity for data to be gathered within a limited time (Adamu, 2006; Papaioannou & Wilson, 2010; Sekaran & Bougie, 2010).

#### **4.4 Population and Sample**

To Sekaran and Bougie (2012) population entails the total collection of people, occurrences, affairs, places and any other thing which may crave the indulgence of the researcher which he may resolve to explore. In line with that, population has been conceived as the gathering of data and information in which its properties will be analyzed in a particular study (Hair, Black, Babin, Andersen & Tatham, 2010; Cavana, Delahaye & Sekaran, 2001). Accordingly, population to Gray (2004) entails a summation of all possible units or items that are to be covered in a research. This simply implies that a population is a collection of things and persons which a particular study wishes to cover with a view to identify and analyze certain features of a sample or a group within the larger population. Population has been perceived to mean the total collection of persons objects and phenomena for which the researcher seeks

generalization and population where the researcher can derive his/her own generalization (Castillo, 2009). The area of the study/research is Sokoto State which an estimated population of 4.3 million people across the 23 local governments in the state (NPC, 2010). Figure 4.1 below shows the geographical map of Sokoto State and its local governments.



**Figure: 4.1** Map showing the study area.

Source <http://welcometosokoto.yolasite.com/geography.php>

The choice of Sokoto State as the population for the study was informed by its tagging as the poorest State in Nigeria signifying that Sokoto State has the highest number of poor people in Nigeria (NBS, 2013). For the study to be feasible, effective, and less costly the whole population was not covered rather a collection of 12 local governments within the Sokoto State were chosen and samples were drawn and the findings were generalized.

#### 4.5 Sampling

Sampling can be seen as the act or process of choosing a good number of units or elements to study in a given population. This is because taking the whole population is not without problems like financial cost and time consuming (Sekaran & Bougie, 2013). Imperatively, the selection of a smaller group within the entire population makes the conduct of the study more effective as the researcher would have time to look at issues under examination more carefully than if the whole population is to be studied. In the same line, Kerlinger and lee (2000) conceived sampling as the identification and picking of a smaller group to partake in a study as the representation of the larger population which in turn provides data or information that enables the researcher to make inference towards the general population. The present study conducted its investigation in 12 local governments out of the 23 local governments that made up Sokoto State using the senatorial district structure. The local governments were as follows,

- i. Gada
- ii. Goronyo
- iii. Rabah
- iv. Wurno, from the Sokoto East senatorial district;
- v. Binji
- vi. Gudu
- vii. Tangaza
- viii. Wamakko, from Sokoto North senatorial district; while
- ix. Bodinga
- x. Tambuwal
- xi. Tureta
- xii. Yabo, from Sokoto South senatorial district.

The choice of the local governments was influenced by a prior study by Shamaki et al (2013a) which shows that the local governments had the poorest population in Sokoto State. Related to the above Table 4.1 below gives an illustrative summary of the incidence of poverty in the respective 23 local governments of Sokoto State and further

provides the rationale for drawing samples from the local governments chosen by the present study.

Table 4. 1

*Local Government in Sokoto State and Corresponding Percentage of the Poor*

Local Government	Poor(%)	Extreme Poor(%)
Binji *	59.1	41.9
Bodinga*	57.1	26.3
Dange Shuni	46.4	57.5
Gada*	50.0	15.5
Goronyo*	90.6	65.0
Gudu*	75.0	57.0
Gwadabawa	11.9	4.8
Illela	20.0	10.0
Isa	27.5	10.0
Kebbe	40.0	20.0
Kware	51.0	33.0
Rabah*	55.0	47.5
Sabon Birni	72.5	17.5
Shagari	30.0	20.0
Silame	53.7	34.1
Sokoto North	44.6	17.6
Sokoto South	30.7	10.7
Tambuwa*	54.8	20.0
Tangaza*	97.5	92.5
Tureta*	60.0	30.0
Wamakko*	71.2	40.7
Wurno*	72.5	50.0
Yabo*	68.3	43.8

Source: Shamaki et al. (2013a)

Note: The local governments with asterisk indicated where samples were drawn.



Table 4. 2

*Population of Local Government for Drawn Samples*

Local government	Total Population
S/East Sen. Dist .	
Gada	247051
Goronyo	182118
Rabah	149152
Wurno	162403
S/North Sen. Dist	
Binji	104274
Gudu	95400
Tangaza	114770
Wamakko	179246
S/South Sen. Dist.	
Bodinga	174302
Tambuwal	225919
Tureta	68414
Yabo	115302
<b>Total</b>	<b>1820289</b>

Source: National Population Commission (2010).

With regard to the sample size 95 percent confidence level has been agreed upon as acceptance level designated for social sciences and management sciences studies (Sekaran, 2003). To augment that position, a significance level not up to 0.05 is considered too low to back null hypothesis (Zikmund, 1997, Gray, 2004). In determining sample size, the study adopted Krejcie and Morgan (1970) sample size determination, which corresponds with the relative size of the population.

The total population of the selected local governments indicated above is 1,820,289 people, therefore, base on the postulation of Krejcie and Morgan (1970) the required sample size needed for the study is 384. Considering other possibilities related to bias of the respondent, non-return of questionnaires, and other challenges that may arise, the study added 50 percent of the total samples and augmented the original sample size as recommended by Salkind (see Bartlett, Kotrlik, & Higgins, 2001). Therefore 192 samples were added making it 576 so as to avert or cushion the effect of eventualities. Similarly, this study further employed power analysis to assess that actual sample

needed to conduct the study. Barlett, Kotrlik, and Higgins (2001) stated that determination of the appropriate sample size is very fundamental in survey study. In determining the actual sample size required for a study Ticehurst and Veal (1999) suggested the employing of statistical analysis approach like the statistical power test in arriving at the definite sample size, which is free (independent) of the population of the study. Cohen (1988, 1992), Faul, Erdfelder, Lang, and Buchner (2007) conceived the statistical power analysis as an endeavor that has the probability of accurately discarding (rejecting) an invalid hypothesis (null hypothesis) when the other hypothesis stands valid (true). Largely, researchers are of the opinion that, the larger the sample is, the greater the statistical power would be (Maxwell, Kelley, & Rausch, 2008; Snijders, 2005; Kelley, & Maxwell, 2003; Borenstein, Rothstein, & Cohen, 2001).

In line with the above assertions, to ensure the required minimum usable sample size needed for analysis in this study is attained, independent variables were considered and the researcher employed G\*Power 3.1 software “*A Priori*” power analysis (Faul, Erdfelder, Buchner, & Lang, 2009). The “*A priori*” power analysis used for the determination of the minimum required sample size was built on the following factors: Effect size  $f^2$  0.15 (medium), value of alpha ( $\alpha$  err prob; 0.05), power (1- $\beta$  err prob; 0.95), number of tested predictors (12), these are, human asset, social asset, physical asset, financial asset, natural asset, and livelihood strategy as well as their individual interaction with government intervention as the moderator). Accordingly, the Figure 4.2 below indicated that 184 samples are needed for the testing of this research’s model.

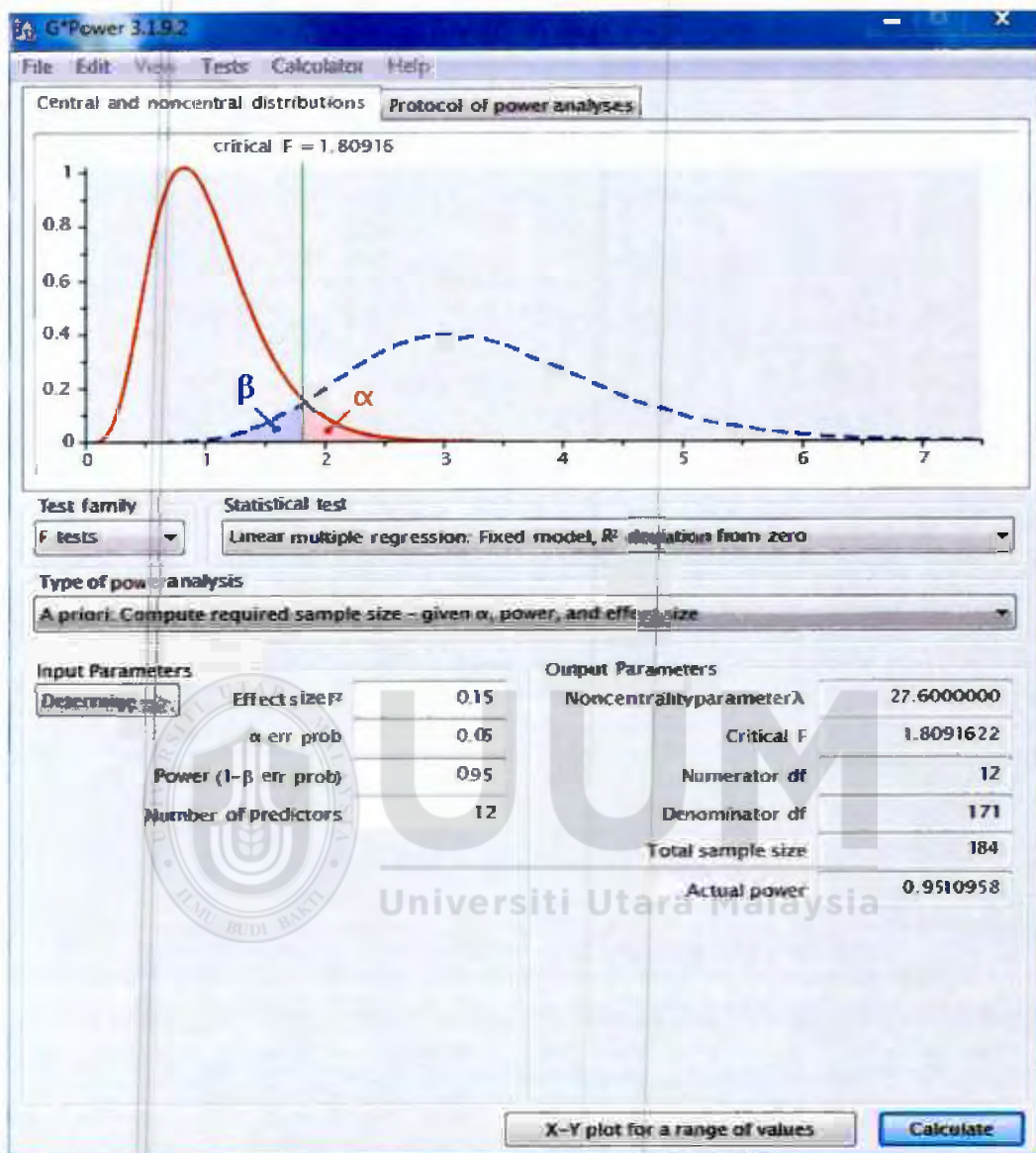


Figure 4.2 G\*Power Analysis

Furthermore, the study used stratified simple random sampling in getting respondents, and information from the samples. Stratified simple random sampling Castillo (2009) entails a kind of probability sampling technique which involves the separation of the population into smaller components referred to as strata in a population. The fundamental characteristic of this technique is the formation of groups or strata base on homogenous features or traits after which sample can be drawn randomly. It has

been posited that, the benefits of the stratified random sampling made it better than other sampling methods, for instance, lower variability of subpopulation, less costly, reduces sample error (Sekaran & Bougie, 2010). The stratification in the context of this research was base on household heads instead of every individual in the sampled local governments as well as the selection of (12) twelve local governments, with four (4) local governments chosen from three (3) senatorial districts of Sokoto State. In getting responses or information from the population of the study, 48 respondents were allocated to each of the twelve (12) local governments chosen from three (3) senatorial districts that make up Sokoto State. Table 4.3 below shows the strata, total population of the chosen local governments and the intended sample to be used.

Table 4. 3  
*Percentages of Respondents Per Local Government*

Strata	Population	Resp/LG	Percentage	Samples
12 Local governments	1820289	48 respondents	8.3 x 12	576

Source: Simulation by Reseachar

#### 4.6 Instruments and Measurements

In this section, the study looked at the measurements that were developed and adapted for measuring the constructs of the present study's model. In the present study questionnaires were administered to respondents within the sampled population in twelve (12) local governments. A five (5) Likert type '1' "Strongly Disagree" to '5' "Strongly Agree" was used in measuring human asset, social asset, physical asset, natural asset, and sustainable poverty reduction, while for measuring financial asset, livelihood strategy, and government intervention five (5) a Likert scale from '1' Never to '5' Always, was used to get responses.

#### 4.6.1 Human Asset (HA)

Human asset is an essential factor that represents a collection of basic elements or features of household's richness in the process of livelihoods. It sums the skills, knowledge and experience, labor ability and health status which together enable the households or individuals to secure their livelihoods (Kamaruddin, & Baharuddin, 2015, Kamaruddin, & Samsuddin, 2014; Chen *et al.*, 2013). Table 4.4 below shows items used in measuring human asset by the present study.

Table 4. 4

##### *Measures of Human Asset*

No	Items	Source
1	I received skills acquisition training	Chen et al. (2013)
2	I have vocational skills	
3	I have farming skills and experience	
4	I acquired western education	
5	I acquired Qur'anic education	
6	I have physical ability to labor	
7	I have mental ability to labor	
8	I have good health status	

Adapted: Chen et al. (2013)

Chen et al.(2013), Kamaruddin and Bahuddin (2015) posited the potency of access to human asset in enriching individuals or households toward improving livelihoods and moving out of poverty. To ensure the validity of the construct as posited by (Lawshe, 1975) experts on livelihoods were consulted and have assessed the construct and indicators and found that the indicators have actually captured the construct and can measure it. Similarly, pilot study was conducted to further confirm the validity of the measuring items (see Table 4.13) for reliability test results.

#### 4.6.2 Social Asset (SA)

Social asset entails the social resources that are available to the people that are used or drawn by the households or individuals in pursuing their livelihoods (Chen *et al.*, 2013, Kamaruddin, & Sam sudin, 2014). Social asset is considered as the cheapest assets that

the poor individuals or households can employ to enhance their livelihoods (Halpern, 2005). Social asset enhances relationship amongst family, peers, community and in some larger context international linkages with non-governmental organizations (NGOs) and civil liberty organization. Social asset in the context of the present study was measured as access to social networks and connectedness which refers to some sort of relations that may be vertical (patron/client) or horizontal (between peers or people of the same interest) which advances trust, togetherness and enable access to formal or political institutions and NGOs or right groups; membership of legalized associations like, political parties, welfare associations and labor organization; and relationships of trust, mutual benefit and interchange (DFID, 1999). The Table 4.5 below captured the measures.

Table 4. 5  
*Measures of Social Asset*

No of Items	Source
1 I am connected to a social network	Kamaruddin and Baharuddin (2015)
2 I have a social status in the society	Chen et al. (2013)
3 I represent my people in the local authority	
4 I am a member of a political party	
5 I belong to community-based association	
6 I belong to a cooperative society	

Adapted: Kamaruddin and Baharuddin (2015), Chen et al. (2013)

To confirm the validity of the construct and the measuring indicators, the present study conducted content validity as postulated by Lawshe (1975) whose main point is to validate the fit of the adapted measures so as to ensure the ability of the indicators to capture the construct. Similarly, pilot study was conducted to further confirm the content validity of the items (see Table 4.13) for the reliability results.

#### 4.6.3 Physical Asset (PA)

Physical asset denotes a combination of basic infrastructure and facilities households and individuals use or act upon to meet livelihoods. Physical asset consists of basically some physical resources that add value to life of the society. These resources are product of human action which in turn shapes the life of the community (DFID, 1999). Physical asset means physical facilities and productive equipment moveable and non-moveable (Kataria *et al.*, 2012). Physical Infrastructure like roads, vehicle, fishing equipment, toilet facility, health care facility, school, and market, electricity which are basically important to livelihoods earning (Kamaruddin, & Baharuddin, 2015, Chen *et al.*, 2013). Table 4.6 below shows the measures for access to physical asset.

Table 4. 6

*Measures of Physical Asset*

No of Items	Source
1 I have access to good road	Chen et al. (2013)
2 I have good means of transportation	
3 I have good house made of cement blocks	
4 I have household goods	
5 I have access to good drinking water	
6 I walk a short distance to fetch water.	
7 I have access to good sanitation facility.	
8 I have access to electricity supply.	
9 I use good cooking fuel/energy source	
10 I have access to the internet service.	
11 I have access to means of communication.	
12 My household has access to school.	
13 My household has is close to market.	
14 My household is close to hospital	

Adapted: Chen et al., (2013)

As posited by Lawshe (1975) content validity for both the construct and measuring items was conducted and the items were found to be essential enough to capture the construct, thus, its validity in terms of content is good. Again, to re-confirm the strength of the measuring items or indicators, pilot study was conducted before main data collection to re-assess the validity of the items measuring the construct (see Table 4.13) for the reliability test results.

#### 4.6.4 Financial Asset (FA)

Financial Asset encompasses all forms of financial resources individuals and households use to meet their livelihood needs. These are the resources that people use for consumption and production objectives (Kamaruddin, & Samsudin, 2014, DFID, 1999). Scoones (1998) sees financial asset as an aggregate or capital asset which includes cash, credit, savings and other economic assets. This asset could be in cash or liquid assets like jewellery and livestock (see Table 4.7 below). Financial asset has been argued to be the pivotal point for accessing other livelihood assets as availability of financial asset could lead to acquisition of other livelihood assets (Bajwa, 2015, Chen, *et al.*, 2013). Specifically, Table 4.7 indicated the items used by the present study for measuring the construct of the study (financial asset) which was adapted as rightly indicate.

Table 4. 7

*Measures of Financial Asset*

No	Items	Source
1	I save money for future use.	Kamaruddin and Samsudin (2014) Chen <i>et al.</i> , (2013)
2	I have livestock to sell in time of needs.	
3	I have jewellery to sell in time of needs	
4	I do receive pension every month	
5	I receive salary every month	
6	I do receive financial assistance from government	
7	I do receive remittances from members of the family	
8	I do engage in petty trading to increase my income	
9	I do engage in commercial labor for more income	

Adapted: Kamaruddin and Samsudin (2014), Chen *et al.*, (2013)

To ensure validity of the measuring indicators content validity was conducted, and experts on livelihoods assets were consulted (Lawshe, 1975), and the indicators were found have strong content validity (essential) to capture the construct. Similarly, pilot study was be conducted to confirm the validity of the content of the measuring indicators (see Table 4.13) for the results of the pilot study.



#### 4.6.5 Natural Asset (NA)

Natural asset comprises of natural resources that households or individual use or access, act upon and make livelihoods ends. Natural asset is a resource that households can access and utilized which in turn could result in sustainable poverty reduction (Samsudin, & Kamaruddin, 2013). Natural asset is seen as natural endowment which if accessed and harnessed avails the opportunity to utilize natural resources like river water for fishing and irrigational purposes, mineral resources and forest resources to make end meets (DFID, 1999). Table 4.8 below shows measuring items used by the present study in assessing access to natural asset in the study area.

Table 4. 8

*Measures of Natural Asset*

No. of Items	Source
1 I have enough land for cultivation/farming.	Samsudin and Kamaruddin (2013)
2 I have land that is of good soil quality.	
3 I have access to river/ water resources for commercial fishing.	
4 I have access to river/ water resources for irrigation	
5 I have access to mineral resources for commercial activities (soil/sand, clay, solid minerals)	
6 I have access to economic trees for commercial purpose	
7 I have access to forest trees for commercial firewood.	
8 I have access to grass and shrub for sale	

Adapted: Samsudin and Kamaruddin (2013)

Like other measuring indicators of other constructs, the principle of Lawshe's content validity (1975) was employed and the measuring indicators were subject to the assessment and scrutiny of livelihoods experts with a view to ascertain their content validity. The measuring items were found to have met the content validity and have captured the construct. To boost confidence in the validity of the indicators, the researcher conducted a pilot study to re-ascertain the reliability of the measuring indicators (see Table 4.13) for the results of the reliability test.

#### 4.6.6 Livelihood Strategy (LS)

The way households and individual access and use livelihood assets, in the context socio-economic, political and environmental spheres, formed what is livelihood strategy. Livelihood strategy varies and households can devise different activities to meet their livelihood needs. Collective livelihood strategy could be adopted by the entire households' members or opt for different tasks to ensure the sustenance of households' livelihoods (UNDP, 2005). Similarly, livelihood strategy denotes an array of activities that households or individuals engage in to secure their livelihoods or coping strategy to ensure livelihoods' security so as to keep them away from food insecurity which affect livelihoods of household and worsen their condition, thus pushing them into vulnerability to poverty (Shuaibu *et al.*, 2015) This involves undertaking activities that provide returns and empower or enhances households' capability to secure different assets that are essential to households' livelihood sustenance (Bosongo, *et al.*, 2014; DFID, 1999). Table 4.9 below shows indicators used in measuring adoption of livelihood strategy in the study area.

Table 4. 9

##### *Measures of Livelihood Strategy*

No.	Item	Source
1	I do engage in formal work	Shuaibu et al. (2015)
2	I do engage in farming for subsistence.	Bosongo et al. (2014)
3	I do engage in off-farm labor	
4	I do engage in commercial motorcycle riding to earn income	
5	I do raise and sell livestock (cattle, goats, and poultry)	
6	I do run small scale business/petty trading	
7	I do migrate to neighboring city to earn livelihood	
8	I do migrate to another country	
9	I borrow money from commercial banks	
10	I borrow money from government microfinance institution	
11	I borrow money from family members	
12	I do sell household liquid assets to buy food	
13	I rely on less expensive food	
14	I borrow food from individuals	
15	I purchase food on credit	
16	I reduce the number of meals per day	

Adapted: Shuaibu et al. (2015), Bosongo et al. (2014)

To ensure the efficacy of the measuring indicators/items in capturing the domain of the construct, content validity as opined by (Lawshe, 1975) was conducted and the raters have found the measures to be essential enough to capture the domain of the construct and measure it. Furthermore, pilot study was being conducted to confirm the content validity of the measures (see Table 4.13) for the results of the reliability test.

#### 4.6.7 Government Intervention (GI)

Government intervention means the involvement of the government or the State in developmental issues like poverty reduction and other policies and programs geared towards improving the welfare, well-being, and standard of living of the people (Ibrahim, & Alam, 2016). Government intervention denotes policy intervention and establishment of structures that provide services that are designed specifically to address the socio-economic and political empowerment of the poor and the deprived in the society (Loewen, 2009). Government Intervention in this context is concerned with socio-economic and political empowerment of the people as well as the reshaping of policies and structures to suit particular condition so as to address the problems of specific circumstances and people while at the same time incorporating the target beneficiaries in the decision that affect them (Loewen, 2009). Table 4.10 below indicates the item used in measuring government intervention in the study.

Table 4. 10

#### *Measures of Government Intervention*

No of Items	Source
1 I do receive government financial support	Subject-Matter Experts (2016)
2 I do receive government social welfare package	
3 Government provides support to small enterprises	
4 Government poverty reduction policies are impacting positively	
5 Government poverty reduction policies are pro-poor	
6 Government consults me on poverty reduction related decisions concerning my household	
7 Government involves me directly in the design and	

- 
- Implementation of poverty reduction policies
  - 8 Government poverty reduction institutions and policies are effective and efficient
  - 9 Government subsidizes Agriculture
  - 10 Government provides incentives to boost Agriculture
- 

Source: Subject-matter Expert Rating (2016)

To ensure the efficacy of the measures, content validity in line with (Lawshe, 1975) was conducted and experts on livelihood studies were consulted and the measures were found to be essential enough to capture the domain of the construct. Again, to further make sure that the measures have the efficacy of capturing the construct domain pilot study was conducted before main data collection was conducted to avoid content validity challenge while on the field proper (see Table 4.10) for the results of the reliability test as per pilot study.

#### 4.6.8 Sustainable Poverty Reduction

Sustainable poverty reduction within the context of sustainable livelihoods approach denotes a harmonious and continuous access to livelihood resources that enable households and individuals to make ends meet. It is seen as the accumulation of livelihood assets which in turn ensure increased food security, well-being, education, gainful employment and basic infrastructure (DFID, 1999; DFID, 2000; Khan, & Shamsul Arefin, 2013). In line with the position of DFID, sustainable poverty reduction means a consistent access to livelihood assets that empower households and individuals to overcome poverty in a continuous but harmonious basis which results into increased income, improved food security, gainful employment, well-being, improved material health and education (Loewen, 2009). The Table 4.11 below captured the items used by this study for measuring sustainable poverty reduction.

Table 4. 11

*Measures of Sustainable Poverty Reduction*

No	Item	Source
1	My income level increased	Subject-matter Experts (2016)
2	My saving and investment increased	
3	My household is livelihood assets secured	
4	My household is food secure	
5	I have good access to basic physical infrastructure.	
6	I can send my children to school.	
7	I can buy clothes for my family.	
8	I have a good shelter	
9	Health status of my household improved.	
10	My skills and capabilities improved	

Source: Subject-matter Expert Rating (2016)

To ensure the efficacy of the content validity of the measuring items developed from literature (DFID, 1999; Loewen, 2009; Khan & Shamsul Arefin, 2013), and content validity Lawshe (1975) was conducted, the items for measurement were subjected to experts' scrutiny (rating) and the items were found to be essential enough to capture the construct's domain. According to Lawshe (1975) to ensure reliability of the content validity, the measuring items should be subjected to the assessment of expert (raters) and if majority of the raters or judges agreed that the items are essential, then the items have some level of content validity. To complement it further, pilot study was conducted to further confirm the reliability of the measurement before the proper data collection (see Table 4.13) as per the results of the reliability test.

In summary, the Table 4.12 below contains the total of eight (8) constructs, and eighty one (81) items adapted and developed used in the present study. Related to that, the table indicates the number of responses categories that were used in the present study. Similarly, interval measurement scale was used on a five (5) Likert scale which the study considered appropriate.

**Table 4. 12**

***Summary of Measures and Measurement Scale***

<b>Construct</b>	<b>Items</b>	<b>Scale</b>	<b>Type</b>
Human Asset	8	Interval	5
Social Asset	6	Interval	5
Physical Asset	14	Interval	5
Financial Asset	9	Interval	5
Natural Asset	8	Interval	5
Livelihood Strategy	16	Interval	5
Government Intervention	10	Interval	5
Sustainable Poverty Reduction	10	Interval	5
8	81	-	-

Source: Simulation by Researcher

#### **4. 7 Validity and Reliability**

Fundamentally, validity and reliability deal with the adequacy of indicators deployed to measure a particular construct. Researchers conduct validity and reliability assessment to confirm the fitness of the adapted or developed measures (Sekaran, & Bourgie, 2013). At one end validity evaluates the efficacy of the measures to capture and measure exactly the construct intended to measure while at the other end reliability assessment investigates the extent at which the measures are random error-free while maintaining coherent result.

##### **4.7.1 Validity**

Validity entails the precision of a particular measure or the magnitude with which a particular scores exactly and honestly stand for a particular construct (Zikmund, Babin, Carr, & Griffin, 2013). Validity assessment has been conceived as testing of how correctly a designed instrument captures a construct it was designed to measure (Sekaran, & Bourgie, 2013). There are four methods of evaluating validities which are content validity, construct validity, face validity, and criterion validity. In line with that assertion, this study employed content validity as well as construct validity.

#### **4.7.2 Reliability**

Reliability of a measure shows the level or degree of which it is free of error (i.e., bias-free), which ensures the consistency of measurement over time and over different items (Sekaran & Bourgie, 2013). In the same vein, reliability measure indicates the stability and consistency of instrument which measures concept or construct, thus, helps to ascertain the 'goodness' of a measure. As espoused by Sekaran and Bourgie (2013) the present study employed composite reliability and assessed the internal consistency of the adapted constructs, and were computed within the frame of average inter-correlations amongst items measuring the constructs (Sekaran & Bourgie, 2013).

#### **4.7.3 Content Validity**

Content validity connotes the level or extent that a measure covers the scope of the domain of interest (Zikmund, *et al.*, 2013). The essence of content validity is to ensure that measure captures significant and essential elements of a latent construct. Thus, the more the items represent or capture the domain of the construct being measured, the more content validity of the measure is high (Sekaran & Bourgie, 2009). It has been espoused that measures could be subjected to the examination of the experts in the field 'panel of raters' to ascertain the content validity of measures. Accordingly, the present study employed Lawshe's (1975) method for assessing content validity. The method essentially aimed at establishing consensus or common position amongst the raters or assessors as to how essentially a particular item is measuring a construct. To Lawshe (1975) each rater, who must be an expert in the subject matter, should respond in the following manner against the item: Is the skill or knowledge by this item '(a) essential (b) useful but not essential and (c) not necessary' towards measuring a particular construct or concept. Lawshe's rule is when more than half of the assessors or raters indicate essential for an item then the item has some guarantee of content

validity. In this case, Lawshe recommends the use of odd number (i.e) 3, 5; and that, the higher the number of raters that adjudged the item to be essential, the greater or extent of its content validity. In the context of this study three (3) experts were consulted in assessing the content validity of the measures and all the three responded in the positive, with measures on government intervention found useful, but not essential by one (1) rater but 2/3 found items of government intervention (GI) to be essential.

#### **4.7.4 Construct Validity**

To Sekaran and Bourgie (2009) construct validity assesses to what extent did the results is achieved when a particular measure employed actually evaluated a developed concept. Construct validity is determined through the assessment of convergent validity at one hand, and discriminant validity on the other hand. While Sekaran and Bourgie (2013) asserted that convergent validity is said to be established when items of more than one (two or multiple) items correlate while measuring the same construct, on the other hand discriminant validity exists when a particular measure measuring a construct differs with another measure that is measuring other different constructs (Zikmund *et al.*, 2013).

While construct validity is assessed through either correlation analysis, and factor analysis, multi-method can also be utilized (Sekaran, & Bourgie, 2013). On the one hand, Zikmund et al (2013) stated that multivariate factor analysis could be employed in determining the existence of construct validity. In the context of this study, confirmatory factor analysis and correlation analysis were both used to assess construct validity. In specific terms, average variance extracted (AVE) was employed



and the convergent validity was determined, while Fornell Lacker criterion as well as cross loading of the items were used in the determination of the discriminant validity (Hair, Hult, Ringle, & Sarstedt, 2014).

#### **4.8 Pilot study**

To further reaffirm the validity, that is, construct validity and reliability of the measures, the present study carried out a pilot test/study before the main data collection. A pilot study has been conceived as a small scale research/study that uses data collected from relatively small group of respondents similar to the intended respondents to be used for the main study for which the purpose is to determine the content validity and construct validity (Sekaran & Bourgie, 2009).

To achieve reliability test for the adapted and developed constructs, a preliminary study was conducted in line with (Zikmund *et al.*, 2013). In line with Dillman (2007), a total of 50 questionnaires were used across Dange Shuni local government of Sokoto State, out of which 40 questionnaires were returned duly completed accounting for 80 percent of the initial instruments deployed for the pilot test. After due consideration of the responses and necessary check 30 out of the returned questionnaire were found to be suitable for the reliability test. It is important to mention that the 30 responses used for pilot test/reliability test were not part of the original study's designated samples.

##### **4.8.1 Result of the Reliability Test**

In conducting the reliability test procedures according to Pallant (2010) were followed using the reliability tool of SPSS, and the output/results of the reliability test indicated that all the instruments attained the minimum (at least) required coefficient alpha values which corresponded within 0.6 – 0.9 (Murphy, & Davidshofer, 1988).

Similarly, Nunnally (as cited in Jaw, Wang & Chen, 2006), Sekaran and Bourgie (2011) suggested that a coefficient alpha of 0.6 is good for the main study since a preliminary test involves a small number of respondents as such it is expected that in the main study the alpha may increase because the sample size would be bigger. In the same vein, Kaplan and Sacuzzi (1982), Hair, Babin, Black, Anderson, and Tatham (2006) recommended an alpha value of between 0.7 to 0.8 for the internal consistency of items and instruments in general to be effective.

In summary, taking into consideration of the above assertions, the result of the reliability test showed that all the constructs and measuring items in particular, and the instrument in general met the standard as such could be used in the main study. The Table 4.13 below shows the reliability test of the pilot study.

**Table 4.13**

***Reliability Test Result: Pilot Test (n=30)***

Construct	Number of Items	Cronbach's Alpha
Human Asset	8	.70
Social Asset	6	.86
Physical Asset	14	.85
Financial Asset	9	.75
Natural Asset	8	.71
Livelihood Strategy	16	.73
Government Intervention	10	.70
Sustainable Poverty Reduction	10	.74

Source: Preliminary Survey

#### **4.9 Data Collection Procedure**

This is conceived as the cardinal or pivotal stage of every study or research without which the study or research effort would be fruitless. Data collection or gathering entails an imperative and central component of research design (Sekaran & Bougie, 2013).

In the context of the present study, questionnaires were administered by the researcher in person, with the aid of research assistants (where necessary). Hair et al. (2007) opined that self-administering of questionnaire technique avails an ample opportunity to the researcher to simultaneously administer and as well collect questionnaires that could be filled or completed in a very little time. Furthermore, this enables the researcher to establish a rapport and understanding with the respondents which may give them a sense of inclusion in the research, and as well address, clear and explain things that may be unclear to the respondents, which otherwise may affect the data, if the questions are not understood by the respondents (Sekaran & Bougie, 2013). Similarly, the presence of the researcher adds value to the collection process of the data, as explanations or briefing about the intention of the study, its objective and possible contributions to the society, government and policy matters, which may also motivate the respondents, while at the same time the researcher can enhance the morale of the respondents by ensuring them of the utmost secrecy and confidentiality of their identities and for those that could not meet up immediately, correspondence with the researcher could be established on how the completed instruments could reach the researcher later.

#### **4.9.1 Data Analysis Technique**

The technique of data analysis means statistical steps and criteria which researchers employ in the analysis of the study's data, as well as test hypothesized relationships projected. In this context, the present study used both descriptive statistics using SPSS v20 and path analysis using PLS-SEM 2.0 for the analysis of the data. In the first place, upon the completion of empirical data collection, the researcher coded and imputed the data in the SPSS v20 environment, after which series of preliminary analysis

followed. It started with data screening, then checking and replacement of missing values, followed by normality test to assess the normality of the data, assessment of outliers and descriptive statistics of the constructs (Saunders, Lewis, & Thornhill, 2009).

Accordingly, this study utilized the Structural Equation Model (SEM) Partial Least Square (PLS) to assess the relations/connections/links amongst the latent constructs. SEM being a second-generation statistical tool is conceived as improved tool of analysis that can concurrently engross (engage) multi criterion/dependent variables, unlike multiple regressions, although both SEM and Multiple Regression can allow or engage compound of independent variables (Hair *et al.*, 2012, Chin, 1998a). Similarly, Gefen, Straub and Boudreau (2000) and Chen (1998b) asserted that PLS-SEM is prominent in behavioral sciences' studies which affords the researchers with the ability to incorporate hidden (unnoticed) variables, which further allows their usage toward path-analysis.

Similarly, the choice of PLS-SEM by this study was influenced by a number of factors, for instance, PLS-SEM has been recognized for its ability to take care of data that is not normal (non-normal data). Furthermore, PLS-SEM has considerate supposition concerning the normality of data in relation to variables distribution (Henseler *et al.*, 2009). PLS-SEM also is capable of evaluating/assessing latent constructs and their correlation with the corresponding indicators (inner model), as well examine the link between the constructs (outer model) (Hair, *et al.*, 2012; Henseler *et al.*, 2009). In relation to non-normal data and small-scale sample PLS-SEM also stands ahead of covariance-based SEM (Macoulides *et al.*, 2009).

In consideration of all the advantages of the PLS-SEM over the first-generation statistical tools as well as being more considerate than co-variance base SEM and its additional advantage of evaluating models of both moderation and mediation, PLS-SEM was chosen for this study as the study involves moderation and has many predictors (exogenous latent variables) and a single criterion variable (Hair et al., 2012; Haenlein, & Kaplan, 2004). Similarly, Smart PLS-SEM has been adjudged to have the ability to embrace or allow both reflective and formative constructs for data analysis (Robert Jr., Dennis & Ahuja, 2008). Therefore, in the context of the present study Smart-PLS-SEM was used for data analysis. Using PLS-SEM 2.0, the study established and evaluated both measurement model (inner model) in which individual item reliability, convergent validity, and discriminant validity as well as cross loading were assessed, whilst in the structural model (outer model) path coefficient values, R Square (coefficient of determination), effect size ( $f^2$ ), and construct cross-validated redundancy (predictive relevance) were assessed and established in line with (Hair *et al.*, 2014).

#### **4.10 Summary of Chapter**

The chapter describes the methodology used in the present study. Apart from indicating the concern of the chapter, research design chosen was also discussed, then the population of the study as well as the sample. Similarly, sampling method chosen was discussed and justified in the chapter. Furthermore, both the adapted and developed measures for the study were identified and the procedures of assessing their validity and reliability were discussed. In relation to that, the researcher explained that pilot test was conducted for the adapted measures as well as content validity for the developed ones so as to ensure their efficacy for the main study. Data collection

process for the main study, coupled with the preliminary analysis conducted and the chosen method for analyzing data for the main study were all forwarded and discussed.



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## **CHAPTER FIVE**

### **PRELIMINARY ANALYSIS OF DATA**

#### **5.1 Introduction**

This chapter deals with the study's results of the preliminary analysis which were analyzed through the statistical package for social sciences (SPSS v20). In this chapter, the researcher conducted a preliminary analysis in particular cleaning and screening of data, checking as well as treating of missing values and treatment of outliers were carried out. Additionally, Multicollinearity, Test of non-response bias and Common method bias were discussed in the succeeding part of this chapter.

#### **5.2 Response Rate**

In the present study, for the purpose of data collection, 576 questionnaires were distributed to the sampled household heads, out of which 510 questionnaires were retrieved accordingly responded, thus representing about 89 percent of the entire questionnaires distributed. However, only 439 responses of the total returned questionnaires representing 86 percent were found to be usable for the analysis, and also 116 questionnaires were removed as outliers, thus, not suitable for the analysis in line with (Hair, Anderson, Tatham, & Black, 1998). Table 5.1 below presents the details of the response rate.

Table 5. 1

*Distributed Questionnaires and Response Rate*

Questionnaire	Frequency	Rate(%)
Distributed questionnaires	576	100
Unreturned	66	11
Returned	510	89
Removed	116	36
Usable/Used	323	64

Source: Simulation by the Researcher

Although the rate of response for the study is just about 64 percent out of the envisaged 100 percent, the size is deemed sufficient enough for analysis for the present study. It is imperative to note that, attainment of 100 percent of the research's sample is not a prerequisite/requirement for the study's results to be valid and suitable for generalization. In line with that, Babbie (2007) argued that social sciences literature on research has recommended 50 percent as considerably sufficient; 60 percent good; and 70 percent as very good response's rates respectively. Therefore, based on the preceded argument the rate of response for the present study is sufficient for analysis. Equally, with regards to the sample of the study, the 576 sample size mentioned was based on the 50 percent samples increased upon the original sample size (i.e., 384), meant to take care of non-response bias in line with suggestions made by Salkind (see Bartlett, Kotrlik, & Higgins, 2001). Nevertheless, regarding the initial sample size (i.e 384) as determined using Kregcie and Morgan's (1997) table and statistical power analysis 3.1 (Faul *et al.*, 2009), the usable response rate of 323 which corresponds to 84 percent of the original sample has been achieved. To sum up, the achieved response rate for this study is adequate enough for data analysis.



### **5.3 Preliminary Analysis**

For the purpose of conducting some statistical analyses with regards to the research questions, certain preliminary analyses need to be conducted at the beginning (Pallant, 2010). Furthermore, before the preliminary analyses, the data were coded, saved or entered into a specific file. In the present study, the researcher employed SPSS v20 for coding, screening and the general preliminary analysis.

#### **5.3.1 Data coding and Screening**

Adequately filled and retrieved questionnaires (439) were coded and entered into SPSS variable view platform. Similarly, items that constituted the variables of the study were coded and formatted in serial order, for instance, eight items/questions measuring human asset were coded as HA01, HA02, HA03, HA04, HA05, HA06, HA07, and HA08 (e.g., question no. 4 “I acquired western education” was coded as HA04. Similarly, the same procedure was repeated for all the items of the study’s independent constructs/variables comprising the five (5) livelihood assets and livelihood strategy. Likewise, for the dependent variable sustainable poverty reduction, items were coded as SPR01, SPR02, SPR03, SPR04, SPR05, SPR06, SPR07, SPR08, SPR09, and SPR10. As for the moderating/interacting variable which is government intervention items were coded as GI01, GI02, GI03, GI04, GI05, GI06, GI07, GI08, GI09, and GI10.

Accordingly, after cautious coding and entering of the responses, data were screened. This stage is very crucial and necessary as suggested by Bhatti, Hee and Sundram (2012) where missing values were identified and addressed, and outliers were removed. Consequently, apart from the identification and treating of missing values as

well as outliers, further preliminary analyses necessary were performed in the present study which includes normality test and multicollinearity test as recommended (Hair, Black, Babin, & Anderson, 2010).

### **5.3.2 Analysis of Missing Value**

Pallant (2010) argued that it is difficult to get a data set that is complete from all the returned questionnaires while conducting a survey research since the respondents are humans, therefore, it is expected of the researcher to check and treat information that is missing from the data set accordingly. For the purpose of checking the missing values descriptive statistics was employed and therefore a frequency table was generated via SPSS. The result of the descriptive statistics has shown that, out of the 41,310 data points inputted, only 3 were discovered randomly missing from the dataset, which represents only 0.007 percent of the entire data gotten. In specific terms, natural asset, livelihood strategy and sustainable poverty reduction have only 1 missing value respectively. Notwithstanding, the percentage of the missing value has no efficacy as such it is not significant enough to affect the data as it does not go beyond the reasonable 5 percent as posited by (Schafer, 1999; Tabachnick & Fidell, 2007). However, the researcher replaced the missing values as suggested by (Little & Su, 1983; Pigott, 2001; Schafer & Graham, 2002), despite the fact that, the missing values occurred at random and not in systematical manner as such the study opted for missing value replacement, thus, mean substitution method was used as recommended by a number of researchers (Little, 1988, Little & Rubin, 1989; Mislevy, 1991; Tabachnick & Fidel, 2007). Table 5.2 below illustrates the missing values and the items affected.

Table 5. 2

*Missing Values and Items Affected*

Latent Variable	Missing	Items Affected
Natural Asset	1	NA02
Livelihood Strategy	1	LS07
Sustainable Poverty Reduction	1	SPR10
Total/Percentage	3 out of 41,310 data points	0.007%

Source: Simulation by the Researcher

**5.3.3 Assessment of Outliers**

Outliers are conceived as irregular observations in a data set that fall short of consistency unlike other observations or remaining data set (Barnett & Lewis, 1986, Barnett & Lewis 1994; Hodge & Austin, 2004). Outliers are distinctly observations with characterized information different from other observation (Hair *et al.*, 2010). Similarly, Grubbs (1969) posited that, observation(s) identified as an outlier might have resulted from a flagrant deviation from the direction of the remaining observations as such it should be rejected. Allowing an outlying observation to remain in the data set could seriously affect the determination of the coefficients and in turn could leads to false result (Verardi & Croux, 2008). Nevertheless, an observation could be an outlier as a result of an unnoticed error in the calculation or recording, hence, it should be corrected. The study analyzed the frequency tables of the entire variables by employing the descriptive statistics with the aim of crosschecking to ensure no value has been inputted contrary to the scale's range, and none was identified. Furthermore, an outlying observation could be a univariate or multivariate (Hodge & Austin, 2004). At this stage, the study conducted outliers check to detect outrageous responses beginning with the univariate outliers, in line with Tabachnick and Fidel (2007) where an observation with a standardized value of  $\pm 3.29$  should be removed as an outlier. In line with that, Hair *et al.* (2010), recommended standard scores of 2.5-3 (80 sample

and below), and 4 (larger sample), depending on the sample size as outliers. At this juncture the present study detected 116 cases as univariate outliers.

Accordingly, with regards to multivariate outliers as suggested by Tabachnick and Fidell (2007), this study employed Mahalanobis distance ( $D^2$ ), which explains the distance of an observation from the point of intersection of the remaining observation. Hair *et al.*, 2010; Hair *et al.*, 2014) suggested 0.001 as the threshold for the Mahalanobis distance. However, this study employed multivariate method but no multivariate outlier was detected.

#### 5.3.4 Normality Test

The present study is a multivariate one, which employed normality check which is essentially an assumption for multivariate analysis. Normality connotes the shape or nature of the data distribution of the metric variable and its conformity in line with the normal distribution (Hair *et al.*, 2010). Although some scholars argued that, PLS-SEM works perfectly with a data that is not normal (Cassel, Hackl, & Westlund, 1999; Qureshi & Compeau, 2009; Reinartz, Haenlein, & Henseler, 2009). However, recent literature suggested that, researchers should recognize the normality of the data distribution (Hair *et al.*, 2014; Hair, Sarstedt, Ringle, & Mena, 2012). Their position was premised on the position that, data that is extremely skewed increase standard error of bootstrap (Chernick, 2008), therefore may miscalculate the path coefficients' statistical significance (Dijkstra, 1983; Hair *et al.*, 2012).

Accordingly, the present study applied multivariate normality to evaluate the nature of the data distribution using Kurtosis and Skewness. Specifically, Kurtosis deals with

whether the data is peaked or flat in comparison with a normally distributed data, while Skewness addresses balance in the data distribution at the center or at both sides (Hair *et al.*, 2010). It has been argued that both Kurtosis and Skewness have some empirical measures in different statistical packages. Therefore, going by the generated results as indicated in the table below, the metric variables of both Kurtosis and Skewness were observed to be below the critical values of  $\pm 2.58$  (Bhatti *et al.*, 2012). Nonetheless, Tabachnick and Fidell (2013) posited data abnormality in terms of skewness and kurtosis usually have no effect as it does not occasion changes as far analysis, particularly when dealing with 200 samples and above. The Table 5.3 below captured the results of the Normality Test clearly.

Table 5.3

*Normality Test: Skewness and Kurtosis Statistics (n=323)*

Construct	Min	Max	Mean	Stdv	Skewness		Kurtosis	
	Sta.	sta.	Sta.	Sta.	Sta.	Std.Err	Sta.	Std.Err
HA	1.38	5.00	3.09	0.67	-0.25	0.14	0.14	0.27
SA	1.00	4.67	1.93	0.82	0.89	0.14	0.18	0.27
PA	1.07	4.07	2.23	0.65	0.40	0.14	-0.50	0.27
FA	1.00	3.11	1.56	0.39	0.88	0.14	1.12	0.27
NA	1.00	4.50	2.06	0.77	0.76	0.14	0.10	0.27
LS	1.19	3.88	2.12	0.39	0.48	0.14	1.39	0.27
GI	1.00	2.20	1.20	0.27	1.28	0.14	0.74	0.27
SPR	1.00	4.90	2.34	0.61	0.68	0.14	1.06	0.27

Source: Simulation by the Researcher (Normality Test Results).

### 5.3.5 Multicollinearity Test

The term multicollinearity entails the relationship that exists between independent latent variables (Pallant, 2010), and its presence substantially affects the quality of the evaluation of coefficients, hence the implication for their statistical significance (Chatterjee & Yilmaz, 1992; Hair *et al.*, 2006; Tabachnick & Fidell, 2007). Multicollinearity is said to exist when latent independent variables are so much

correlated. More explicitly, if the correlation between a particular latent variable and another is as high as 90 percent ( $r=0.9$ ) or more than that, thus it shows that there is multicollinearity between the variables (Pallant, 2010; Hair *et al.*, 2010). To assess whether there is high correlation amongst the predictors (IVs) of the study, thus correlation matrix was evaluated (Chetterjee & Yilmaz, 1992; Peng & Lai, 2012). Table 5.4 below indicated the correlation between all the predictor variables (IVs) is within the benchmark (i.e.,  $r=.9$ ), thus below the range. This indicated that, multicollinearity amongst the variables does not exists from the correlation matrix shown (Hair *et al.*, 2010; Pallant, 2010).

Table 5. 4

*Multicollinearity Test: Correlation Matrix (n=323)*

Variables	1	2	3	4	5	6	7
Human Asset	1						
Social Asset	.45**	1					
Physical Asset	.37**	.31**	1				
Financial Asset	.29**	.32**	.35**	1			
Natural Asset	.34**	.36**	.28**	.32**	1		
Livelihood Strategy	.34**	.28**	.11**	.42**	.37**	1	
Government Intervention	.01**	.15**	.01**	.12**	.03**	.05**	1

Source: Simulation by the Researcher (SPSS Multicollinearity Test)

Note: \*\*. Correlation is significant at the 0.01 level (2-tailed).

Nevertheless, there is another approach of checking multicollinearity issue as recommended by literature which is by assessing the variance inflation factor (VIF) and it corresponding tolerance value (Peng & Lai, 2012; Hair, Ringle, & Sarstedt, 2011; Hair *et al.*, 2014). Hair *et al.* (2014) advocated that a tolerance level of 0.20 and below, while VIF value of 5 or higher depicts the occurrence of multicollinearity amongst the variables. Additionally, when the tolerance value is 0.20 or below and a VIF value is 5 and above (i.e., tolerance over 1) meaning  $0.20/1$ , thus, 80 percent of

that construct/variable is said to be explained by other independent variables in a study model.

Table 5. 5

*Multicollinearity Test: Tolerance and VIF (n=323)*

Constructs	Collinearity Statistics	
	Tolerance	VIF
Human Asset	0.70	1.43
Social Asset	0.71	1.4
Physical Asset	0.75	1.33
Financial Asset	0.70	1.44
Natural Asset	0.75	1.34
Livelihood Strategy	0.71	1.40
Government Intervention	0.96	1.05

Source: Simulation by the Researcher

What could be seen from the above table is that all the predictors/independent variables are having a tolerance value or level higher than 0.20 set as a threshold, while the VIF values of all the independent variables are less than the designated value of 5. This has glaringly shows that there is the absence of multicollinearity amongst the variables. In summary, the correlation matrix and the collinearity results through the mechanisms of tolerance and VIF have confirmed that the exogenous latent variables of this study have no multicollinearity issues.

### 5.3.6 Test of Non-response Bias

In survey research, non-response means the failure of the researcher to get response or data from some supposed respondents within the sample, while non-response bias deals with the failure to get a response from some supposed respondent partly or whole (Hawkins, 1975). Notwithstanding, some researchers argued that the survey results cannot be affected by the change in non-response rate. It is important to note the

potential effect of the non-response bias on the quality of the study's results because of its possibility to make the generalization of the research's findings difficult if not impossible (Collier & Bienstock, 2007). Armstrong and Overton (1977) stressed that, if responded subjects differ substantially from those who do not, the generalization of the result cannot hold for the entire population. Conversely, since no data was obtained from non-respondent people, it is more or less impossible to assess the divergence between the elements that responded and those who do not. It has been suggested that early and later respondents can be evaluated so as to analyze bias caused by non-response (Wang & Lamb, 1983). People who responded late are almost the same with those elements that failed to respond completely, as their responses at the later time might have been influenced or stimulated by events, circumstances or other motives (Armstrong & Overton, 1977).

Accordingly, this study categorized the responses in two sets (groups) precisely early (1) and late (2) responses group depending on the time the questionnaires were retrieved by the researcher (Vink & Boomsma, 2008). Based on the grouping of the responses, it was observed by the researcher that bulk of the responses of the usable retrieved questionnaires (251) fit into the early response group, while the remaining (72) responses (questionnaires) belonged to late response group. Accordingly, Table 5.6 below indicated the categorization of the responses into early and late responses respectively.



Table 5. 6

*Test of Non-response-Bias: Independent-Samples T-Test (n=323)*

Construct	Group	No	Mean	Levene's Test for Quality of Variance	
				F	Sig
Human Asset	Early	251	3.07	12.96	.37
	Late	72	3.15		
Social Asset	Early	251	1.89	.24	.12
	Late	72	2.07		
Physical Asset	Early	251	2.25	.92	.47
	Late	72	2.18		
Financial Asset	Early	251	1.56	6.42	.57
	Late	72	1.53		
Natural Asset	Early	251	2.05	3.41	.85
	Late	72	2.07		
Livelihood Strategy	Early	251	2.12	6.07	.75
	Late	72	2.13		
Government Intervention	Early	251	1.22	9.68	.01
	Late	72	1.13		
Sustainable Poverty Reduction	Early	251	2.33	2.73	.45
	Late	72	2.39		

Source: Simulation by the Researcher

Accordingly, to assess the level of significance of the variance between the response groups, the study used independent sample t-test, and the divergence (difference) was determined through the use of Levene's test for quality of variance at the significant level of 0.05 in line with (Coakes, 2013; Pallant, 2010). Table 5.6 above has encapsulated results of the Levene's test which indicated that there is no significance in terms of the difference between early and late response group in relation to human asset, social asset, physical asset, financial asset, natural asset, livelihood strategy, government intervention, as well as sustainable poverty reduction. Based on the above, the study presumed there is no presence of non-response bias, thus, the results of the study can stand generalization as the responded elements represent the entire population. Furthermore, since the response rate is above 50 percent, the problem of non-response bias is of secondary concern to the study (Linder & Wingenbach, 2002).

### 5.3.7 Common Method Bias

Common method bias refers to a prejudice which is related to common method variance (CMV). It relates to the variance which is associated with measurement method and not the construct it envisaged to represent (Campbell & Fiske, 1998; Podsakoff, MacKenzie, Lee & Podsakoff, 2003). It entails a false correlation among variables influenced by adopting the same mechanism to measure each variable in a research/study (Malhotra, Kim & Patil, 2006; Podsakoff *et al.*, 2003) which could lead to void conclusion about the correlation between variables which affect the result (Conway & Lance, 2010; Podsakoff *et al.*, 2003; Podsakoff, MacKenzie & Podsakoff, 2012; Podsakoff & Todor, 1985).

Nonetheless, common method bias is basically a likely problem of behavioral sciences research and discourse about possible effect which exist in the past 40 years (see Campbell & Fiske, 1998), and till now basically because of the assumption in its possible effect nowadays (cf. Lindell & Whitney, 2001; Spector, 2006; Branick, Chan, Conway, Lance & Spector, 2010). Common method bias has been conceived by researchers to be a possible problem for being a major source of measurement error (Podsakoff *et al.*, 2003). In particular, measurement error threatens the strength or authenticity of the results' conclusion about the relationship amongst measures of two or more constructs (Bagozzi & Yi, 1991). Error in measurement is categorized into two, these are random error and systematic error, while all the two types are problematic, on one hand systematic error is more problematic as it gives doubtful or unrealistic explanation about the relationship concerning measures of various constructs (Campbell, & Fiske, 1998; Podsakoff *et al.*, 2003), on the other hand, random error connotes mistakes that deal with many items measuring same construct

which brings about inflation of the item score (Schwab, 2013). Similarly, systematic errors refer to errors that are related to measurement method, which are considered more harmful and tend to give false observed relationship between the dependent and independent variables (Rungtusanatham, Choi, Hollingworth, Wu, & Forza, 2003), which can substantially void the findings of a research (Podsakoff *et al.*, 2003).

However, arguments exist about the seriousness of common method bias (Podsakoff *et al.*, 2003), thus making it important to this study. Although there are different statistical and procedural techniques to assess and treat common method variance in behavioral studies, which include reverse wording, items or question clearness, respondents' identity protection, and the one-factor Harman's test (Podsakoff *et al.*, 2003). For the purpose of this study, Harman's one-factor test was employed, and unrotated factor analysis was considered including all items of the variables of the study which shows that no factor is beyond the threshold of 50 percent variance. It further indicated that there is no common method bias in the study as only a variance of 35.4 percent was caused by a single factor. This is in line with Lowry and Gaskin (2014), and Podsakoff *et al.* (2003) who unanimously agreed that, common method bias exists only when a single factor accounts for 50 percent and above variance.

#### **5.4 Summary of Chapter**

The chapter discussed the processes undertaken in respect of data coding, screening and preliminary analysis using SPSS version 20. In particular the chapter explains the number of questionnaires distributed by the researcher and the response rate as per returned or retrieved questionnaires. Similarly, the chapter explains data coding process where every questionnaire was given an identity and data screening which

involves finding and treating of missing values, assessment of outliers where outrageous responses were detected and removed. Furthermore, the normality test and analysis of the data was carried out in which skewness and kurtosis were evaluated while on the other hand multicollinearity was checked specifically to make sure there is no multicollinearity between the latent constructs of the study. In a similar vein, non-response bias was assessed and discussed in the chapter in which difference between early and late responses was evaluated and discussed, and lastly, common method variance was evaluated to confirm that there is no measurement error which could lead to the assumption of invalid correlation among variables or latent constructs of the study.



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## **CHAPTER SIX**

### **DEMOGRAPHIC PROFILE OF HOUSEHOLDS IN SOKOTO STATE**

#### **6.1 Introduction**

This chapter examined the general demographic characteristics of the respondents in the study area which provides insight into the type of respondents that the study dealt with, their jobs, income and expenditure, access to essential services and ownership of household goods. It further evaluated the frequency of the responses about the individual indicators of the measuring constructs as well as descriptive statistics of the study's latent constructs.

#### **6.2 Demographic Features of the Respondents**

This section deals with the demographic traits of the study's subjects presented in the frequency distribution and rates/percentages. Specifically, it deals with the demographic features and categorical variables evaluated by the study which includes age of the respondents, gender, nationality, marital status, their educational attainment, religion, and number of dependents, occupation and number of wives, training attendance, health status, house ownership and electricity supply, access to water supply, distance to town, market, workplace and hospital. Other categorical variables include ability to save money, access to a subsidy, and access to a loan.

Similarly, income dimension of the respondents was considered and it includes sources of main income (salary, agriculture, and fishing); off-farm income (trading, manual labor, selling of firewood, commercial driving, and commercial motor cycle riding), and other source of income like pension, zakat and alms/charity. The study also considered income expenditure (i.e., food & drink, health, and medicine, utility bills, clothes, education, and entertainment).

Conclusively, the study examined property ownership of the respondents in three dimensions which include transportation means (i.e., car, lorry, motorcycle, bicycle, and others. While on household goods television, radio, washing machine, fan, refrigerator, electric cooker and furniture were considered, and with regards communication dimension access to mobile phone and internet service were examined, and also the availability offarm equipment was considered. Conversely, frequencies, and percentages for demographic categorical variables of the respondents were presented.

Considering the above, the study considered the age of the respondents in Table 6.1 below which indicated the age distribution of the respondents in the study area.

Table 6. 1  
*Distribution of the Respondents by Age*

Age	Frequency	Percentage	Cumulative Percentage	Mean Age
20-30	32	9.9	9.9	48.6 Years
31-40	88	27.2	37.2	
41-50	88	27.2	64.4	
51-60	54	16.7	81.1	
61 & Above	61	18.9	100	
Total	323	100		

Source: Field Survey Data (2016)

It can be observed from Table 6.1 that majority of the respondents of the study are between the ages 31-50 years which have cumulative frequency of 176 and 54.4 percent of the total usable responses (this shows that the majority of the household heads in the study area are of middle ages) followed by those respondents between 61 years and above which constituted 61 frequency rate and 18.9 percent of the total valid responses, then respondents between 51-60 years who made up to 54 frequency rate and 16.7 percent of the total valid responses, and lastly the category of those respondents that fell within the age limit between 20-30 years which constituted 32 in terms of frequency and 9.9 percent of the total respondents. Overall, the mean age of the respondents is 48.6 years which implies that most of the respondents are within the range of middle ages. Similarly, the study considers the gender of the respondent as part of the demographic profile which is presented in Table 6.2 below.

Table 6. 2

*Distribution of the Respondents by Gender*

Gender	Frequency	Percentage	Cumulative Percentage
Male	321	99.4	99.4
Female	2	.6	100
Total	323	100	

Source: Field Survey Data (2016)

With regards to gender Table 6.2 captures succinctly the characteristics of the respondent base on gender polarization, where more significantly the male gender over weighted the female gender with a frequency rate of 321 constituting 99.4 percent of the total valid responses against the female gender which accounted for only the frequency rate of 2 and 0.6 percent of the total valid responses. This is not surprising being Sokoto State a predominantly Muslim society, where patriarchy is also practiced, that is to say responsibility of providing for the family needs falls on the shoulder of the male folks, therefore it is unusual to allow female household headship,

unless in circumstances where the males are virtually non-existing or totally incapacitated.

Next is the demographic feature of the respondents concerning nationality as Sokoto State shares border with Niger Republic therefore some local governments like Gudu, Tangaza, and Gada are at the border side between Nigeria and the Niger Republic, hence there is need to rule out the possibility of engaging other nationals as the concern resolves around Sokoto State, Nigeria. However, all the 323 respondents are Nigerian citizens as well as indigenes of Sokoto State which is the subject of this study. Therefore, it has been established that by demography the respondents are valid for the study as the samples were drawn from within the right, and valid population of the study area.

This study also considered the local government of origin of the respondents so as to ensure that none of the local governments selected as far samples is left out, therefore Table 6.3 below shows the breakdown of the respondents by local government.

Table 6. 3  
*Distribution of Respondents by Local Government Area*

Local Government	Frequency	Percentage	Cumulative Percentage
Gada	29	9.0	9.0
Tangaza	26	8.0	17.0
Binji	26	8.0	25.0
Gudu	21	6.5	31.6
Goronyo	30	9.3	40.9
Wurno	23	7.1	48.0
Rabah	23	7.1	55.1
Tureta	24	7.4	62.5
Tambuwal	28	7.4	71.2
Bodinga	23	7.1	78.3
Yabo	37	11.5	89.2
Wamakko	33	10.2	100
Total	323	100	100

Source: Field Survey Data (2016)



On local government of indigene where the samples were drawn Table 6.3 adequately summarizes the frequency rate as far the usable responses according to the respondents' local government. The study employed that with a view to ensuring that all the sampled local governments are captured and respondents truly come from such local governments. The above Table 6.3 indicated that Yabo local government has the highest frequency of 37 and 11 percent, followed by Wamakko with a frequency rate of 33 and 10.2 percent, with Goronyo having 30 in terms of frequency and 9.3 percent of the total response rate, then Gada with 29 as far frequency and 9.0 percent, while Tambuwal has 28 frequency rate and a total of 8.7 percent. Similarly, Tangaza and Binji local governments have 26 frequency rate each and 8.0 percent respectively, while Tureta has 24 frequency rate and constituted 7.4 percent of the entire usable respondents, whereas Wurno, Rabah, and Bodinga local governments accounted for 23 frequency rate each and 7.1 percent respectively, with Gudu having the least frequency rate of 21 and a total of 6.2 percent of the entire usable response rate.

Similarly, this study deemed it important to consider the demographic characteristics of the respondents with respect to marital status as households are expected to be headed by married males unless in special circumstances where the husband is late or incapacitated in which you find female or senior male child bearing the responsibilities, and Table 6.4 below shows the marital status of the respondents.

Table 6. 4

*Frequency Distribution of Marital Status*

Marital Status	Frequency	Percentage	Cumulative Percentage
Married	322	99.7	99.7
Single	0	0	0
Widower/Widowed	1	.3	100
Divorced	0	0	0
Total	323	100	100

Source: Field Survey Data (2016)

On marital status, 322 respondents of the study are married representing 99.7 percent, while 1 respondent .3 percent is a widower. This is not surprising as mostly headship of the household is presumed (traditionally) to be the prerogative of the married people unless in special circumstances in case of divorce then the issue of single parenthood comes in, or death of a spouse.

Moreover, this study has taken into account the level of education (western) of the respondents as it is important to understanding the characteristics of the samples which have relationship with their orientation and general well-being and Table 6.5 below shows the level of western education attainments of the respondents.

Table 6. 5

*Frequency and Percentage of Respondents Level of Education*

Level of Education	Frequency	Percentage(%)	Cumulative Frequency
M.Sc.	1	0.30	0.30
B.Sc./HND	5	1.50	1.80
Diploma/NCE	42	13.00	14.90
Secondary School Certificate	43	13.30	28.30
Primary School Certificate	31	9.60	37.80
None	201	62.30	100
Total	323	100	100

Source: Field Survey Data (2016)

In relation to the educational attainment of the respondents Table 6.5 has clearly illustrated the variety and level of the educational disposition of the respondents, with

very significant number of the respondents (201 respondents) which equals 62.3 percent of the total respondents as having no any educational certificate or qualification (who mostly either because of lack of awareness, tradition, religious belief or lack of means to it), this has succinctly demonstrated that majority of the respondents are rural dwellers with no educational (western) qualification. Then the next category of the respondents attained only what is considered secondary school certificate which amounts to 43 in frequency rate and a total of 13.3 percent of the entire respondents. Next is the category of respondents with intermediary certificates (diplomas and national certificate of education), thus making them more advantaged in terms of employability against the aforementioned categories, accounting for 42 frequency rate and a valid percentage of 13.0. Additionally, respondents with only primary school certificate accounted for 31 frequency rate and a total of 9.6 percent, while the category of respondents that made it to university or polytechnic and obtained either a degree or higher national diploma stood at 5 in terms of response frequency and only 1.5 percent of the total respondents, while only 1 respondent has a master degree and thus accounts for only .3 percent of the total valid responses. This has impliedly indicated that, about 62.2 of the sampled respondents do not have any western education touch.

In the same vein, the study considers the religious affiliation of the respondents and Table 6.6 below indicated the religious inclination of the respondents.

Table 6. 6

*Distribution Respondents on Religion*

Religion	Frequency	Percentage	Cumulative Percentage
Islam/Muslim	323	100	100
Non-Muslim	0	0	0
Total	323	100	100

Source: Field Survey Data (2016)

The Table 6.6 above indicated that the 323 respondents are all Muslims which is not surprising as predominantly Sokoto State is a Muslim State, there are very few places where non-Muslim reside, like in Wamakko, Gwadabawa, Gada, and Illela local governments although in a very insignificant population. But to balance the study religious inclination of the respondents was considered, and incidentally all the 323 respondents are Muslims constituting 100 percent.

Similarly, the number of spouses of the respondents was also considered by this study and Table 6.7 below indicated the number of wives by the respondents.

Table 6. 7

*Number of Wives of the Respondents*

No.of Wives	Frequency	Percentage	Cumulative Percentage	Mean
One Wife	187	57.9	57.9	1 wife
Two Wives	110	34.1	92.0	
Three Wives	22	6.8	98.0	
Four Wives	3	.9	99.7	
Not Applicable	1	.3	100	
Total	323	100	100	

Source: Field Survey Data (2016)

On the number of spouse/wives, the descriptive statistics in Table 6.7 above indicated that, majority of the sample household heads have only one wife with a frequency rate of 187, and a total of 58.2 percent of the entire study respondents, followed by those with two wives amounting to 110 as far frequency which account for 34.1 percent

while those with three wives stood at 22 and 6.8 for frequency and percentage respectively, while only one respondent representing .3 percent lost his wife as at the time of this study, however he has children and aged parent to cater for. These statistics further highlighted the feature of the study respondents, taking into cognizance that polygamous marriage is much practiced in the study area.

Additionally, household size was considered as a critical part of the demographic features of the respondents by this study as it gives a picture of dependents of a particular household head. Table 6.8 below explains the household size of the respondents of the study.

Table 6. 8

*Frequency Distribution of Respondents Household Size*

Household Size	Frequency	Percentage	Cumulative Percentage	Mean
2-5	44	13.6	13.6	10 Dependents
6-10	136	42.1	55.7	
11-15	85	26.3	82.0	
16-20	28	8.7	90.7	
21 & Above	30	9.3	100	
Total	323	100	100	

Source: Field Survey Data (2016)

Considering the impact of household size/number of dependents on poverty and livelihood security, the study considered the household size of the sampled households, thus, Table 6.8 has indicated the variation in terms of the number of households' dependents who fall within the care of the heads of the households. It has been revealed by the descriptive frequency/statistics that household heads with between 6-10 dependents have 136 frequency rate and a total of 42.1 percent, followed by the category of household heads with between 11-15 dependents which accounts for 85 frequency rate and 26.3 in terms of percentage.

More so, the descriptive statistics show that, household heads with 2-5 dependents account for a frequency rate of 44 and a total percentage of 13.6 percent, whereas household heads with 21 dependents and above have 30 and 9.3 for frequency and total percentage respectively, and lastly, household heads with between 16-20 dependents equal to 28 with regards to frequency, which account for 8.7 percent of the entire valid responses. In summary, the essence of this demographic characteristic of the respondents is to understand how the number of dependents can influence household head's poverty. Averagely, household heads or respondents of this study have 10 dependents to take care of or provide for.

Likewise, in trying to capture the basic features of the respondents this study considers information about the main or major occupation of the respondents which in turn gives insight into the income source of the household heads/respondents, therefore Table 6.9 shows the categories of the main occupation of the respondents.

Table 6. 9

*Frequency Distribution of Respondents Main Occupation*

Main Occupation	Frequency	Percentage	Cumulative Percentage
Civil Service	108	33.4	33.4
Farming	197	61.0	94.4
Fishing	9	2.8	97.2
None	9	2.8	100
Total	323	100	100

Source: Field Survey Data (2016)

Table 6.9 above shows the respondents' main occupation which illustrated further the occupation or engagements of the household heads to earn their livelihoods. In this regard, the statistics show that 197 respondents have farming as their main occupation totaling 61.0 percent, followed by the category of 108 respondents which constitute

33.4 percent as government employees (civil servants) as main the occupation. Other categories include respondents whose main occupation is fishing, and those who do nothing as their occupation accounting for 9 in terms of frequency rate and 2.8 as total percentage respectively.

Notwithstanding, the study further considered part-time or off-farm occupation engaged by the respondents of the study and the categorization has been buttressed by Table 6.10 below.

Table 6. 10

*Frequency Distribution of Respondents Part-Time Occupation*

Part-Time Occupation	Frequency	Percentage	Cumulative Percentage
Labor/Manual Work	39	12.1	12.1
Hunting	14	4.3	16.4
Petty Trading	86	26.6	43.6
None	184	57.0	100
Total	100	100	100

Source: Field Survey Data (2016)

On part time occupation, Table 6.10 above statistics revealed that, 184 respondents out of 323 respondents do not engage in any part-time activity to earn a living which represent 57.0 percent of the respondents while other category of respondents who indicated petty trading as their part-time occupation stood at 86 with regards to frequency and accounts for 26.6 percent whereas those respondents with labor work as their part-time occupation equal a frequency rate of 39 and a total percentage of 12.1 percent, while the last category of respondents involves those who identified hunting as their part-time occupation amounting to 4.3 percent signaling a frequency rate of 14. Impliedly, the results indicated that significant percentage (57.0) of the study' respondents do not engage in any activity in form of part-time occupation, which may have effect on their livelihoods and influence their poverty status.

Likewise, the study also recognizes training attendance for vocational and technical skills of the respondents as it furnishes the study with the better background features of the subjects of the study, and Table 6.11 below captures succinctly the distribution of the respondents by training attendance.

Table 6. 11

*Frequency Distribution of Respondents by Training Attendance*

Training Attendance	Frequency	Percentage	Cumulative Percentage
Yes Attended	29	9.0	9.9
Not Attended	294	91.0	100
Total	100	100	100

Source: Field Survey Data (2016)

Consistent with the importance of demographic characteristic of the respondents, the study emphasized on the identification of the respondents vocational skills and training attendance, respondents were asked as to whether they have attended any form of training to enhance their skills and the Table 6.11 above indicated that of the 323 valid respondents, 294 respondents 91.0 percent have not attended any form of skill acquisition training, which represents 91.0 percent of the total valid responses, while only 29 respondents 9.0 identified that they attended some sort of training ranging from carpentry, electrical electronic apprenticeship and auto-mechanic, and plumbing as well as driving school.

The next concern of the study on the demographic characteristics of the respondents is the health status of the respondent as healthy living enhances human asset and livelihoods outcome, therefore, Table 6.12 below gives an account of the health status of the respondents.



Table 6. 12

*Distribution of the Respondents by Health Status*

Good Health Status	Frequency	Percentage	Cumulative Percentage
Yes	266	82.4	82.4
No	57	17.6	100
Total	100	100	100

Source: Field Survey Data (2016)

On health status of the respondents, the statistics in Table 6.12 above indicated that only 57 respondents, precisely, 17.6 percent indicated that they have one health challenge or the other, ranging from asthma, paralysis, arthritis, deformity and chronic ulcer which usually hamper their day to day livelihood activities, while a significant number of them 266 representing 82.4 percent indicated that they do not have any health challenge.

Afterwards, ownership of house was considered by study and Table 6.13 below reflects the level of house ownership amongst the respondents.

Table 6. 13

*House Ownership Status of the Respondents*

House Ownership	Frequency	Percentage	Cumulative Percentage
Own House	314	97.2	97.2
Rent House	9	2.8	100
Total	100	100	100

Source: Field Survey Data (2016)

In respect of house ownership which is essential to the household heads Table 6.13 above indicated that only 9 respondents representing 2.8 percent of the usable responses indicated that they are living in a rented house (i.e., they do not own a house), whereas majority 314 representing 97.2 percent indicated that they owned personal houses. Although, the quality of the houses is substandard, with no floor,

space, ventilation and substantially mud-type with shrubs roofing etc., (see Appendix B) for some type of housing in some study locations.

Another important consideration for the demographic information by the study is the accessibility to electricity and Table 6.14 below explained the level of accessibility to electricity amongst the respondents.

Table 6. 14

*Access to Electricity status of the Respondents*

Access to Electricity	Frequency	Percentage	Cumulative Percentage
Yes	98	30.3	30.3
No	225	69.7	100
Total	100	100	100

Source: Filed Survey Data (2016)

With regards to electricity supply which is essential in today's life, Table 6.14 above indicated that a significant number of the respondents (225) accounting for 69.7 percent do not have access to basic electricity supply, thus limiting their chances of earning means of livelihoods through establishment of cottage and micro enterprises, small kiosk and host of others, while only 98 respondents which equaled only 30.3 percent that indicated that they have access to electricity, although they posited that sometimes they see light once a week, some once a month, while a host of others said not more than five times a month (for instance Yabo, Bodinga, Gudu, Gada, and Rabah). In essence, even where there is access the supply is not functional and interruptive.

Apart from access to electricity, the study also recognizes access to safe drinking water in the demographic features of the respondents and Table 6.15 below explains the sources of water available to the respondents.

Table 6. 15

*Access to Good Source of Water of the Respondents*

Good Water Supply	Frequency	Percentage	Cumulative Percentage
Yes (Tap/ Bore-hole)	55	17.0	17.0
No (Well/Pond)	268	83.0	100
Total	100	100	100

Source: Field Survey Data (2016)

On the access to portable and safe drinking water, the results of the frequency statistics in the above Table 6.15 revealed that about 83.0 percent which accounts for 268 valid respondents do not have access to pipe-borne water considered as safe drinking water, as their main sources are river like in Goronyo town, Giyawa village in Goronyo, Ponds for instance in some villages in Gada, well in Yabo and Tambuwal e.t.c., while only 55 respondents which account for only 17.0 percent said they have access to pipe-borne and borehole water which are mainly in Tureta and Wamakko local governments. This shows that majority of the respondents do not have access to safe drinking water as well, river and pond were identified as the main sources of water to the respondents (see Appendix C) as far the main source of water for the majority of the respondents.

Consequently, this study also considers distance being covered by the respondents from their homes to town which in the case of this study is the local government headquarters for social interactions and closeness to the constituted authority and other social services and amenities like hospitals, schools e.t.c. Table 6.16 explains further.

Table 6. 16

*Distance Covered by Respondents from House to Town*

Distance House to Town	Frequency	Percentage	Cumulative Percentage	Mean
1-5 Km	184	57.0	57.0	3.9KM
6-10 Km	60	18.6	75.5	
11-15 Km	16	5.0	80.5	
16-20 Km	5	1.5	82.0	
21 & Above	2	0.6	82.7	
Less than 1 Km	56	17.3	100	
Total	323	100	100	

Source: Field Survey Data (2016)

The results from the collected data in the Table 6.16 above indicated that, 57.0 percent of the respondents equaling 184 frequency rate cover a distance between 1-5 kilometers to reach town, while 18.6 percent with a frequency of 60 cover between 6-10 kilometers to get to town, and another 17 percent cover less than 1 kilometer to reach town, whereas another 5.0 percent accounting up to 16 respondents in terms of frequency cover between 11-15 kilometers to get to the town, while only 2 in terms of frequency which stood at 0.6 percent cover 21 kilometers and above. These results indicated that majority of the respondents reside at the country-side (villages) and averagely majority of the respondents cover up to 3.9 kilometers from their homes to the town.

Similarly, distance from the house to market was considered by the study in the demographic profile of the respondents and Table 6.17 below expresses the respective distances being covered by the respondents to access the market in their domains.

Table 6. 17

*Distance Covered by Respondents from House to Market*

Distance House to Market	Frequency	Percentage	Cumulative Percentage	Mean
1-5 Km	170	52.6	52.6	5.2KM
6-10 Km	86	26.6	79.3	
11-15 Km	35	10.8	90.1	
16-20 Km	6	1.9	92.0	
21 & Above	2	0.6	99.7	
Less than 1 Km	24	7.4	100	
Total	323	100	100	

Source: Field Survey Data (2016)

Accordingly, the statistics in the above Table 6.17 revealed that about 170 respondents which represent 52.6 percent of the total respondents cover between 1-5 kilometers from their homes to the nearest market, while 86 respondents accounting for 26.6 percent of the total valid responses indicated that they cover in-between 6-10 kilometers to get to the nearest market for buying and selling, and another 10.8 percent about 35 respondents identified that they cover between 11-15 kilometers to access the nearest market, whereas 7.4 percent equaling 24 respondents revealed that they cover less than 1 kilometer to access the market, another 1.9 percent which represents 6 respondents indicated that they cover between 16-20 kilometers before they get to the market, and only 0.6 percent which corresponds to 2 respondents identified that, they cover 21 and above kilometers to access market. Similarly, according to the results, a mean distance of 5.2 kilometers is being covered by the majority of the respondents before they access a market which signifies, fairly, an access to the market.

However, the study further assessed the distance being covered by the respondents from their homes to working places (government establishments, shops, farms, workshops e.t.c.) where they earn a living and Table 6.18 below gives a vivid explanation as to distance the respondents cover from house to workplaces.

Table 6. 18

*Distance Covered by Respondents from House to Work-Place*

Distance House to Work Place	Frequency	Percentage	Cumulative Percentage	Mean
1-5 Km	214	66.3	66.3	3.6KM
6-10 Km	37	11.5	77.7	
11-15 Km	12	3.7	81.4	
16-20 Km	3	9	82.4	
21 & Above	5	1.5	83.9	
Less than 1 Km	52	16.1	100	
Total	323	100	100	

Source: Field Survey Data (2016)

Concerning distance from home to working place a substantial number of respondents 214, about 66.3 percent indicated that they cover between 1-5 kilometers to their working places, whereas 52 respondents representing 16.1 percent identified that they cover less than a kilometer to get to their working places. Similarly, 11.5 percent amounting to 37 respondents indicated that they cover between 6-10 kilometers to reach their working places, while 12 respondents representing 3.7 percent showed that they cover between 11-15 kilometers before they get to their various places of work, and another 1.5 percent standing for 5 respondents disclosed that they cover 21 kilometers and above to get to their places of work. The statistics revealed that majority of the respondents are relatively close to their places of work, and averagely majority of the respondents cover up to 3.6 kilometers from their home to working places.

Likewise, this study looked as part of the demographic profile distance being covered by the respondents to access hospital when the need arises as proximity to the hospital is essential to well-being, and Table 6.19 below provides information about that.

Table 6. 19

*Distance Covered by Respondents from House to Hospital*

Distance House to Hospital	Frequency	Percentage	Cumulative Percentage	Mean
1-5 Km	194	60.1	60.1	4.8 KM
6-10 Km	94	29.1	89.1	
11-15 Km	19	5.9	95.0	
16-20 Km	5	1.5	96.6	
21 & Above	2	0.6	97.2	
Less than 1 Km	9	2.8	100	
Total	323	100	100	

Source: Field Survey Data (2016)

On the distance from home to hospital, Table 6.19 above shows a frequency of 194 representing 60.1 percent of respondents who cover between 1-5 kilometers with a view to access the hospital for medical services, while another 29.1 percent with a frequency of 94 revealed that they cover between 6-10 kilometers to access medical services. In a similar vein, the statistics revealed that 19 respondents accounting for 5.9 percent of the total valid responses reported that they cover between 11-15 kilometers to access the hospital, whereas 9 respondents amounting to about 2.8 percent showed that they cover less than 1 kilometer to reach hospital in times of need. Furthermore, only a frequency of 5 and 2 representing 1.5 percent and 0.6 percent respectively indicated they cover 16-20 kilometers and 21 kilometers and above respectively to get to a hospital for medical attention, overall the mean distance usually covered by respondents to access hospital is 4.8 kilometers. However, most of the perceived hospitals are mere primary health centers and dispensaries, nonetheless, it can be said that there is relative proximity to some sort of medical facilities.

The next consideration in the demographic feature is the saving culture by the respondents as saving gives an insight on the well-being of a household or individual. Table 6.20 below explains the saving culture of the study respondents.

Table 6. 20

*Distribution of Respondents on Saving*

Saving	Frequency	Percentage	Amount ₦	Amount RM	Place of Savings
Yes	8	2.5	2 ₦2,000	RM 27.18	Bank
			1 ₦2,385	RM 32.41	Bank
			1 ₦ 5,000	RM67.95	Bank
			1 ₦ 12,000	RM 163.08	Bank
			1 ₦ 20,000	RM 271.80	Bank
			2 ₦ 30,000	RM 407.70	1 Bank 1 Home
No	315	97.5	Nil	Nil	Nil
Total	323	100			

Source: Field Survey Data (2016)

Note: Conversion was based on exchange rate as at 18/06/2017.

Another dimension of the demographic variables of the respondents considered by the study is the ability of the household heads to save money for the future use and the results of the descriptive statistics indicated that of the 323 valid responses about 97.5 percent representing a frequency of 315 indicated that they do not save money. The fact is that they do not earn enough money that can cater for the needs of their households let alone saving, while only 2.5 percent totaling 8 respondents disclosed that they use to save money either in the bank or at home. Base on the Table 6.24 above the 8 respondents that indicated that they save money 2 of them save ₦2000 (RM27.18) in Bank, while another 1 respondent save ₦2,385 (RM32.41) at Bank and another 1 respondent save at Bank ₦5000 (RM67.95). Similarly, 1 respondent also says he saves ₦12,000 (RM163.08) at Bank, and another 1 respondent indicated that he saves ₦20,000 (RM271.80), while 2 other respondents save ₦30,000 (RM407.70) one of which saves at Bank and the other at home respectively. It could be understood that, there is general lack of savings amongst the respondents which according to the respondents results from the lack of enough income to address basic needs let alone to save for future use.



Another important dimension of the demographic characteristic of the respondents considered by this study is access to subsidy by the respondents from government which may be in form of cash incentives, loan for small businesses, agro-products like fertilizer, improved seedlings, farm implement for agricultural activities at subsidized rate, housing loan on owner-occupier basis as well as food stuffs and social welfare packages, and Table 6.21 below captures and explains succinctly the level of access to subsidy by the respondents.

Table 6. 21

*Distribution of Respondents by Access to Subsidy*

Subsidy	Frequency	Percentage	Type of Subsidy	Source
Yes	8	2.5	5_Fertilizer	Government
			1_WaterPumping Machine	Government
			1_Foodstuff	Government
			1_Housing	Government
No	315	97.2	Nil	Nil
Total	323	100	Nil	Nil

Source: Field Survey Data (2016)

With respect to subsidy from government Table 6.21 above indicated that majority of the respondents with frequency rate of 315 accounting for 97.5 percent do not or never receive any form of subsidy from the government, while the remaining 2.5 percent with a frequency of 8 indicated that they benefitted from government subsidy in one way or the other, particularly on agriculture as 5 of the 8 respondents once enjoyed fertilizer subsidy, 1 respondent enjoyed that of water pumping machine for irrigational farming, while another 1 respondent enjoyed subsidy on food stuff, and lastly 1 respondent out of the 8 respondents enjoyed housing subsidy. In particular, all the

subsidies came from government, however, the result showed that subsidy is lacking generally in the study area.

Besides access to the subsidy, the study further considers access to loan by the respondents in relation to the demographic characteristics which explains further the nature of the study's respondents, thus Table 6.22 below provides vital information in that regards.

Table 6. 22

*Distribution of Respondents by Access to Loan*

Subsidy	Frequency	Percentage	Loan Amount	Source
Yes	4	1.2	1 ₦20,000 = RM 271.80 1 ₦50,000 = RM 679.50 1 ₦100,000 = RM 1,359.00 1 ₦500,000 = RM 6,794.99	Bank
No	319	98.8	Nil	Nil
Total	323	100	Nil	Nil

Source: Field Survey Data (2016)

Note: Conversion was based on exchange rate as at 18/06/2017

In this respect, Table 6.22 above indicated that, of the total 323 valid responses, 319 responses representing 98.8 percent indicated NO, implying that they do not have access to loan and never access it, either from the government or private organizations, whereas only 1.2 percent with a frequency of 4 attested that they accessed loan before. Related to that, the 4 respondents that indicated that they accessed loan, accessed ₦20,000 (RM271.80), ₦50,000 (RM679.50), ₦100,000 (RM1,359), and ₦500,000 (RM6,794.99) respectively, however, all the 4 respondents accessed the loan from commercial Banks.

Notwithstanding, this study deemed it important consider as part of the demographic profile of the respondents the monthly level/amount of money earned by the

respondents as main-income. In that regards, Table 6.23 below provides a clear description of the amount of income (main) usually earned by the respective respondents.

Table 6. 23

*Distribution of Respondents by Monthly Main Income*

Main Income Amount	Frequency	Percentage	Average
RM1000 - RM5000 = RM13.59 – RM67.95	26	8	RM17,967
RM6000 - RM10,000 = RM81.54 – RM135.00	69	21.4	
RM11,000 - RM15,000 = RM149.49 – RM203.85	32	9.9	
RM16,000 - RM20,000 = RM217.44 – RM271.86	59	18.3	
RM21,000 - RM25,000 = RM285.39 – RM339.75	34	10.5	
RM26,000 - RM30,000 = RM353.34 – RM407.70	19	5.9	
RM31,000 - RM35,000 = RM421.29 – RM475.65	14	4.3	
RM36,000 - RM40,000 = RM489.24 – RM543.60	2	.6	
RM41,000 - RM45,000 = RM557.19 – RM611.55	7	2.2	
RM46,000 - RM50,000 = RM625.14 – RM679.50	6	1.9	
RM51,000 - RM60,000 = RM693.09 – RM815.40	6	1.9	
RM61,000 - RM65,000 = RM828.99 – RM883.35	1	.3	
RM70,000 - RM75,000 = RM964.81 – RM1,019.25	1	.3	
RM96,000 - RM100,000 = RM1,304.64 – RM1,359	1	.3	
Yes (Do have main income)	277	85.8	
No (Do not have main income)	46	14.2	
Total	323	100	

Source: Field Survey Data (2016)

Note: Conversion was based on exchange rate as at 18/06/2017

With regards to the main income of the respondents, Table 6.23 shows that 8 percent of the respondents earn a monthly main income of between RM1000 to RM5000, while another 21.4 percent of the respondents earns between RM6000 and RM10,000 as main income with which they cater for their households. Similarly, another 9.9 percent of the respondents make between RM11,000 and RM15,000 to provide for the needs of their households, whereas 18.3 percent get between RM16,000 and RM20,000 monthly of which they use to meet the physiological needs of their households. Furthermore,

another set of respondents in particular 10.5 percent make ₦21,000 to ₦25,000 monthly as main income with which they address the needs of their households, whereas some 5.9 percent of the respondents also earn between ₦26,000 and ₦30,000 monthly as main income and another 4.3 percent of the respondents get between ₦31,000 and ₦35,000 monthly.

Likewise another respondents, in specifics 2, accounting for .6 percent earn between ₦36,000 to ₦40,000 monthly as main income with which they meet their households' needs, and another set of respondents 2.2 earn between ₦41,000 to ₦45,000 monthly as main income, whilst 1.9 percent of the respondents indicated that they earn ₦46,000 to ₦50,000 as monthly main income, and another 1.9 percent of the respondents also earn ₦51,000 to ₦60,000 as main income monthly from their main source of livelihoods. Lastly, 3 respondents indicated that they earn different main income with each representing 3 percent and ₦61,000 to ₦65,000; ₦70,000 and ₦75,000; and ₦96,000 to ₦100,000 monthly as main income respectively. Cumulatively, 277 respondents constituting 85.8 percent do have different sources for earning main income monthly ranging from salary, agriculture, and fishing, while 46 respondents accounting for 14.2 percent of the total valid respondents (323) for the study indicated that they do not have any source of income as the main source. Averagely, the mean income per month from the main source among the respondents is ₦17,967.

However, apart from considering the main income, this study also considers the part-time income of the respondents, which furnishes the study with additional demographic information about the respondents of the study, thus Table 6.24 below explains further.

Table 6. 24

*Distribution of Respondent by Monthly Part-Time Income*

Part-Time Income Amount Per Month	Frequency	Percentage	Average
₦1000 - ₦5000 = RM13.59 – RM67.95	25	7.7	₦11,955
₦6000 - ₦10000 = RM81.54 – RM135	63	19.5	
₦11000 - ₦15000 = RM149.49 – RM203.85	25	7.7	
₦16000 - ₦20000 = RM217.44 – RM271.86	12	3.7	
₦21000 - ₦25000 = RM285.39 – RM339.75	8	2.5	
₦26000 - ₦35000 = RM353.34 – RM475.65	8	2.5	
₦36000 - ₦50000 = RM489.24 – RM679.50	4	1.2	
₦51000 - ₦60000 = RM693.09 – RM815.40	2	.6	
Yes (Do earn part-time income)	147	45.5	
No (Do not earn part-time income)	176	54.5	
Total	323	100	

Source: Field Survey Data (2016)

Note: Conversion was on exchange rate as at 18/06/2017

A look at the Table 6.24 above gives a picture of the respondents' part-time income monthly which they use to augment main income earned. In the Table above it was indicated that 7.7 percent of the respondents earn between ₦1000 to ₦5000 per month as additional income, whereas another 19.5 percent of the respondents also get around ₦6000 to ₦10,000 monthly to increase their income so as to cater adequately for the needs of their households. In a similar vein, some respondents representing 7.7 percent of the entire samples earn a monthly part-time income from other activities between ₦11,000 to ₦15,000 as supplement to their main income which further improves their well-being, and another respondents 3.7 percent generate between ₦16,000 and ₦20,000 as monthly part-time earnings to augment their conventional income, while another 2.5 percent of the total respondents earn between ₦21,000 and ₦25,000 monthly from part-time engagements, likewise another 2.5 percent generate ₦26,000 to ₦35,000 per month as part-time income to support the main income of the household heads. In relation to that some 1.2 percent of the total samples earn ₦36,000 to ₦50,000 monthly as income from part-time activities to support their normal

earnings, and lastly, 2 respondents representing .6 percent earn between ₦51,000 and ₦60,000 as part-time income.

Overall, out of the total respondents (323) only 147 respondents representing 45.5 percent of the total respondents indicated that they generate income from part-time activities (petty trading, manual labor, selling of firewood, commercial car driving and commercial motorcycle riding) to support their normal (main) income, while 176 respondents accounting for 54.5 percent asserted that they do not earn income from part-time activities to augment their monthly main income. It is imperative to note here that majority of the respondents do not earn or generate income from part-time activities. Overall, ₦11,955 is averagely earned amongst the respondents as mean part-time income.

To further explore the demographic features of the respondents in terms of income generation this study went beyond main income and part-time income of the respondents to assess other sources of income, thus this study explored the sources and Table 6.25 below describes further.

Table 6. 25

*Distribution of Respondents by other Source of Income*

Other Source _ Amount Per Month	Frequency	Percentage	Average
₦1000 - ₦5000 = RM13.59 – RM67.95	20	6.2	₦9,761
₦6000 - ₦10000 = RM81.54 – RM135	13	4.0	
₦11000 - ₦15000 = RM149.49 – RM203.85	2	.6	
₦16000 - ₦20000 = RM217.44 – RM271.86	1	.3	
₦21000 - ₦30000 = RM285.39 – RM407.70	2	.6	
₦31000 - ₦40000 = RM421.29 – RM543.60	1	.3	
₦41000 - ₦50000 = RM557.19 – RM679.50	3	.9	
Yes (Do earn income from other source)	42	12.9	
No (Do not earn income from other source)	281	87.1	
Total	323	100	

Source: Field Survey Data (2016)

Note: Conversion was based on exchange rate as at 18/06/2017.

Table 6.25 above provides clear description of the amount of income being realized by some of the respondents that have other sources of income monthly which are mainly pension, zakat, remittance from children and charity/alms, hence it has been established that some respondents accounting for 6.2 percent usually get between RM1 000 to RM5000 monthly from other sources to support main income, and another 4.0 percent again earn between RM6000 to RM10,000 monthly from other sources, while another .6 percent of the respondents earn RM11,000 to RM15,000 from other sources to augment the main income.

In the same light, some respondent representing .3 percent gets RM16,000 to RM20,000 per month from some source to support livelihoods, while other respondents amounting to .6 percent earn between RM21,000 to RM30,000 monthly to support the main income. Similarly, a respondent standing for .3 percent earns between RM31,000 and RM40,000, and lastly, some respondents up to .9 percent get between RM41,000 to RM50,000 per month. Altogether, only 42 respondents representing 12.9 percent indicated that they get additional income from other sources, while 281 respondents equalling 87.1 percent indicated they do not get any income from other sources per month, thus majority respondents do not have other sources of income. In general, the mean income from other sources among the respondents is RM9,761.

Afterwards, the study considers the total income that accrue to the respondents per month with a view to ascertain the level of income flow from all sources per month as presented in Table 6.26 below which further provides a very important information.

Table 6. 26

*Distribution of Respondents by Total Monthly Income*

Total Income Per Month	Frequency	Percentage	Average
₦1000 - ₦10000 = RM13.59 - RM135.00	54	16.7	
₦11000 - ₦20000 = RM149.49 – RM271.86	103	31.9	
₦21000 - ₦30000 = RM285.39 – RM407.70	86	26.6	
₦31000 - ₦40000 = RM421.29 – RM543.60	33	10.2	
₦41000 - ₦50000 = RM557.19 – RM679.50	26	8.0	₦22,779
₦51000 - ₦60000 = RM693.09 – RM815.40	16	5.0	
₦61000 - ₦70000 = RM828.99 – RM951.30	1	.3	
₦71000 - ₦80000 = RM964.81 – RM1087.20	2	.6	
₦81000 - ₦90000 = RM1100.97 – RM1223.10	1	.3	
Yes (Total number of Respondent with monthly income)	322	99.7	
No (Do not earn income at all)	1	.3	
Total	323	100	

Source: Field Survey Data (2016)

Note: Conversion from Nigerian Naira to Malaysian Ringgit was based on exchange rate as at 18/06/2017.

Table 6.26 above provides the distribution of respondents by the total amount of income they earn monthly from different sources of income (main income, part-time/off-farm income, and other sources). The first category of respondents earn a total monthly income between ₦1000 to ₦10000 (RM13.59 - RM135.00) which have a frequency of 54 signifying 54 respondents earned the stated amount representing 16.7 percent of the total number of respondents (323) of the study, while 103 respondents representing 31.9 percent earn between ₦11000 - ₦20000 = RM149.49 – RM271.86 as total monthly income from their sources of livelihoods, and some 86 respondents accounting for 26.6 percent of the total used samples (323) earn between ₦21000 - ₦30000 (RM285.39 – RM407.70), while 33 respondents amounting to 10.2 percent earn between ₦31000 to ₦40000 which equal (RM421.29 – RM543.60) per month.

In a similar vein, 26 respondents which equal 8.0 percent of the total samples earn a total monthly income of between ₦41000 to ₦50000 (RM557.19 – RM679.50), whilst



another 16 respondents constituting 5.0 percent of the samples monthly earn between ₦51000 - ₦60000 (RM693.09 – RM815.40) with which they cater for the needs of their households, while only 1 respondent standing for .3 percent earns between ₦61000 to ₦70000 (RM828.99 – RM951.30) monthly to meet livelihood demands, while 2 respondents accounting for .6 percent of the total samples earn on monthly basis between ₦71000 to ₦80000 (RM964.81 – RM1087.15), and another 1 respondent which equals .3 percent of the total used samples earns monthly between ₦81000 and ₦90000 (RM1100.97 – RM1223.10), while only 1 respondent equaling .3 percent was found to earn no income from whatever source. Lastly, empirical data from the survey revealed that ₦22,779 was being realized as the mean of total monthly income amongst the respondents as at the time of field work for this study.

Similarly, the study considered identifying those that are poor base on the national poverty line of Nigeria put at USD \$1 per day which is equivalent to ₦305 per day as shown in Table 6.27 below.

Table 6. 27

*Distribution of Respondent by Poverty Status*

Poverty Status	National Poverty Line (USD \$1) ₦305	Frequency	Percentage
Non-Poor	Above ₦9150 per month using USD\$1 per day	285	88.8
Poor	Below ₦9150 per month using USD\$1 per day	38	11.2
		323	100

Source: SPSS Regression Output

Table 6.27 describes the distribution of respondent's base on their poverty status as non-poor or poor as per Nigerian national poverty line which is based on USD\$1 and equals ₦305 per day adopted (see NBS, 2012). Base on that, the study found that 285 respondents (88.2 percent) have met the threshold of USD\$1 (₦305/RM124.50) per day as opposed to international poverty line of USD\$1.90 adopted by World Bank,

while 38 respondents representing 11.8 percent failed to meet the national poverty line ₦305 or USD\$1 per day.

However, in reality, the amount ₦9150 per month fixed as boundary for identifying poor and who is not cannot meet the rising demands as the \$1 benchmark refers to a head/person per day, particularly considering the fact that the study deals with households and the majority of the respondents have between 6 to 10 dependents to take care of coupled with the reality of prices of goods in the market and social service like education and health, for instance, a 50kg bag of imported rice is sold at ₦15000 to ₦16000 (RM203.85 – RM217.40) which cannot take a household of five (5) a complete month, or an 80kg locally produced rice which is sold between ₦28000 and ₦32000 (RM380.98 – RM435.41), and again the household need to decently eat 3 times a day or at least 2 times a day. Therefore the benchmark or national poverty line in Nigeria is not enough to make households in Nigeria food secured and influence their investment and acquisition of necessary livelihood assets which further secure their overall livelihoods.

Additionally, this study considered the level and type of expenditure household heads incur using their income on monthly basis. The essence is to see how the monthly income of household heads was being spent on the basic services of food, medicine, cloth e.t.c., therefore Table 6.28 below indicates the categories of expenditure on food and medicine by the sample households in the study area.

Table 6. 28

*Distribution of Respondents by Expenditure on Food and Drinks*

Amount Spent on Food & Drinks	Frequency	Percentage	Average
RM1 000 - RM10000 = RM13.59 – RM135.00	55	17.0	RM18,072
RM11000 - RM15000 = RM149 – RM203.85	57	17.6	
RM16000 - RM20000 = RM217.44 – RM271.86	104	32.2	
RM21000 - RM25000 = RM285.39 – RM339.75	28	8.7	
RM26000 - RM30000 = RM353.34 – RM407.70	62	19.2	
RM31000 - RM35000 = RM421.29 – RM475.65	6	1.9	
RM36000 - RM40000 = RM489.24 – RM543.60	4	1.2	
RM41000 & Above = RM557.19 & Above	7	2.2	
Total	323	100	

Source: Field Survey Data (2016)

Note: Conversion was based on exchange rate as at 18/06/2017.

On income expenditure for food and drinks Table 6.28 above indicated that 17.0 percent of the respondents usually incur expenditure on food and drinks monthly ranging from RM1 000 to RM10,000, however the food is cheap and of low quality, while another set of respondents representing 17.6 percent spend between RM11,000 to RM15,000 on food and drink per month to feed households, however the amount is not enough as per market reality in the study area particularly for an average household of 10 people. In the same vein, some respondents equaling 32.2 percent of the total respondents of the study expend between RM16,000 to RM20,000 per month for food and drinks, and another 8.7 percent also spend RM21,000 to RM25,000 on food and drinks monthly, while another 19.2 percent of the total respondents incur food and drinks expenditure of between RM26,000 and RM30,000 monthly. Furthermore, some respondents representing 1.9 percent spend between RM31,000 to RM35,000 on monthly basis for food and drinks on their households whereas another 1.2 percent of the respondents expend RM36,000 to RM40,000 to buy food and drinks for their families per month for sustenance, whilst lastly, 2.2 percent of the respondents monthly spend RM41,000 and above on food and drinks to sustain their households. The mean

expenditure incurred by respondents is ₦18,072. It is worthy to note that all the respondents attested that the usually incur expenditure on food and drinks.

Similarly, level of spending on health and medicine per month was considered by this study therefore Table 6.29 below demonstrates different levels of expenditure usually incurred by respondents of this study.

Table 6. 29

*Distribution of Respondents by Expenditure on Health*

Amount Spent on Health and Medicine Per Month	Frequency	Percentage	Average
₦1000 - ₦10000 = RM13.59 – RM135	238	73.7	
₦1000 - ₦15000 = RM149.49 – RM203.85	3	.9	
₦16000 - ₦20000 = RM217.44 – RM271.86	3	.9	₦5,386
₦26000 - ₦30000 = RM353.34 – RM407.70	1	.3	
No. of respondents that spend on health & Medicine	245	75.9	
Nil (Do not budget or spend on health & Medicine	78	24.1	
Total	323	100	

Source: Field Survey Data (2016)

Note: Conversion was based on exchange rate as at 18/06/2017.

On health and medicine, statistics on the Table 6.29 above revealed that of the 323 total valid responses only 78 respondent representing 23.8 percent indicated that they do not allocate or reserve money for health and medicine, instead they wait for health challenge first before they source for money to address the challenge, while 75.9 percent representing 245 respondents indicated that they allocate or reserve money for health & medicine. Specifically, 73.7 percent of the respondents attested that they spend between ₦1000 to ₦10,000 monthly on medical expenses, while another set of respondents totaling .9 percent expend between ₦11,000 to ₦15,000 to safeguard their health and settle medical expenses per month, and another .9 percent of the respondents spend ₦16,000 to ₦20,000 monthly on the health and medicine of their households, and lastly only a respondent representing .3 percent of the total

respondents spend between ₦26,000 to ₦30,000 on health and medicine per month for the entire household, this indicated that averagely respondents within the sample areas do spend ₦5,386 per month on health and medicine.

Similarly, this study considers the expenditure of the respondents on utility bills per month and the essence was to perceive the level of expenditure on social services like electricity charges and water rates, and the results are presented in Table 6.30 below.

Table 6. 30

*Distribution of Respondents by Expenditure on Utility Bills*

Amount Spent on Utility Bills Per Month	Frequency	Percentage	Average
₦1000 - ₦10000 = RM13.59 – RM135	54	16.7	₦5,535
₦16000-₦20000 = RM217.44 – RM271.86	1	.3	
₦21000- ₦25000 = RM285.39 – RM339.75	1	.3	
No. of respondents that spent on utility bills	56	17.3	
Nil (Do not spend on utility bills)	267	82.7	
Total	323	100	

Source: Field Survey Data (2016)

Note: Conversion from Naira to Ringgit was based on exchange rate as at 18/06/2017.

With regards to settlement of utility bills (electricity and water), the results on Table 6.30 above depicted that about 79.6 percent of the total valid responses usually do not spend or allocate money to utility bills for the simple fact that they do not have access to such services, while 66 respondents that is 20.4 percent of the respondents attested that they allocate money monthly for the settlement of utility bills (commonly for electricity and water). In specific terms, 16.7 percent of the respondents usually spend between ₦1,000 to ₦10,000 monthly to settle utility bills in particular electricity bills, while another respondent at .3 percent spends ₦16,000 to ₦20,000 on utility bill per month as well another 3 percent signifying 1 respondent expends ₦21,000 to ₦25,000 monthly. On a whole, only 17.3 percent of the total respondents (323) incur expenses concerning utility bill within the sampled respondents, while the remaining 82.7

percent do not incur any expenditure at all. Overall, ₦5,535 was the mean expenditure usually incurred by the 17.3 percent of the total respondents who spend money on utility bills.

Next to it is the demographic profile of the study respondents by expenditure or spending on clothing, although it should be noted that, in the context of the this study expenditure on clothing was considered on annual basis as the respondents identified that they only buy clothes during festivities like Eidl-Fitr (Hari Raya), or wedding so it was hard to base the expenditure on monthly basis as even the very few that regularly by clothes do so bi-annually or at most three (3) times per annum, however, Table 6.31 below expatiates further.

Table 6. 31  
*Distribution of Respondents by Expenditure on Clothing*

Amount of Money Spent on Clothing	Frequency	Percentage	Average
₦1000 - ₦10000 = RM13.59 – RM135.00	39	12.1	
₦11000 - ₦15000 = RM149 – RM203.85	58	18.0	
₦16000 - ₦20000 = RM217.44 – RM271.86	76	23.5	
₦21000 - ₦25000 = RM285.39 – RM339.75	25	7.7	
₦26000 - ₦30000 = RM353.34 – RM407.70	37	11.5	
₦31000 - ₦35000 = RM421.29 – RM475.65	10	3.1	₦18,888
₦36000 - ₦40000 = RM489.24 – RM543.60	2	.6	
₦41000 & Above = RM557.19 & Above	14	4.3	
No. of respondents that spent on closes	261	80.8	
No (Do not budget or spend on closes)	62	19.2	
Total	323	100	

Source: Field Survey Data (2016)

Note: Conversion from Naira to Ringgit was based on exchange rate as at 18/06/2017.

Table 6.31 above indicates that 39 respondents representing 12.1 percent of the total samples (323) spend between ₦1000 - ₦10000 (RM13.59 – RM135) on clothing particularly during eidl fitr celebration (Hari Raya) as they cannot afford to buy clothes every month, in particular, the clothes are of low quality and cheap. Similarly, it has

also been shown that 58 respondents amounting to 18.0 percent usually spend between ₦1 000 - ₦15000 (RM149 – RM203.85) for clothing their households during festivities like Eidl-Fitr (Hari Raya) only as they prefer to spend on other things like food, health, and medicine. Additionally, some 76 respondents standing at 23.3 percent of the total valid respondents spend between ₦16000 - ₦20000 (RM217.44 – RM271.86) for clothing, while another 25 respondents accounting for 7.7 percent of the valid samples used by the study expend between ₦21000 - ₦25000 (RM285.39– RM339.75) for clothing per annum for the entire households. Related to that another 37 respondents amounting to 11.5 percent of the total samples (323) expend in-between ₦26000 - ₦30000 (RM353.34 – RM407.70) per annum on clothing for the whole households, and another 10 respondents which equal 3.1 percent of the entire valid samples indicated that they usually spend ₦31000 - ₦35000 (RM421.29– RM475.65) on clothing their households for a whole year, while another 2 respondents representing .6 percent do spend between ₦36000 - ₦40000 (RM489.24– RM543.60) for a whole year for clothing their families, whereas 14 respondents being 4.3 percent of the total valid responses indicated that they expend ₦41000 or more (RM557.19 or more) per year to clothe their families.

In summary, 261 respondents representing 80.8 percent of the total responses indicated that they budget and spend part of their income on clothing their families with a mean expenditure of ₦1 8,888 per annum, while 62 respondents accounting for 19.2 percent indicated that they do not budget nor spend money on clothing their households as the income is not sufficient and their need of food is more important than clothing as such rely on used clothes from members of the extended family and well meaning individuals in the society. It should be noted that respondents that spend money on

clothing mostly rely on the second-hand clothes and do usually patronize low quality fabrics and attires when the need arises.

The next consideration of the study on the demographic profile of the respondents is the income-expenditure of the respondent on the education of their household members/dependents and Table 6.32 below provides details on that demographic variables.

Table 6. 32

*Distribution of Respondents by Expenditure on Education*

Amount of Money spent on Education Per Month	Frequency	Percentage	Average
RM1 000 - RM10000 = RM13.59 – RM135.00	226	70.0	RM5,033
RM11000 - RM15000 = RM149.49 – RM203.85	1	3	
Total respondents that spend on Education	227	70.3	
Total respondents that do not spend on Education	95	29.7	
Total	323	100	

Source: Field Survey Data (2016)

Note: Conversion from Naira to Ringgit was based on exchange rate as at 18/06/2017.

Table 6.32 above shows that of the total respondents (323) for the study 226 respondents resulting to 70.0 percent indicated that they usually spend between RM1 000 - RM10000 (RM13.59 – RM135.00) on monthly basis for the education of their dependents (children and relations), while only 1 respondent signifying 3 percent of the total respondents indicated that he normally spends RM11000 - RM15000 (RM149.49 – RM203.85) for the education of his household members, whereas the remaining 95 respondents accounting for 29.7 indicated that they do not monthly budget nor spend money on education on the ground that some respondents do not have money to enroll their children into school or do not have children of school age, and some do not patronize or recognize western education. Overall, there is a mean expenditure of RM5,033 among the 227 respondents that incur expenditure on education per month.



Additionally, this study also considered the income expenditure on entertainment usually incurred by the respondents and has been presented in the table 6.33 below.

Table 6. 33

*Distribution of Respondents by Expenditure on Entertainment*

Amount spent on Entertainment Per Month	Frequency	Percentage	Average
RM1000 - RM10000 = RM13.59 – RM135.00	92	28.5	
RM1000 - RM15000 = RM149.49 – RM203.85	1	3	
Respondents that spent money on entertainment	93	28.8	RM5,080
Respondents that do not spend on entertainment	230	71.2	
Total	323	100	

Source: Filed Survey Data (2016)

Note: Conversion from Naira to Ringgit was based on exchange rate as at 18/06/2017.

The Table 6.33 above indicated that out of the total samples of the study (323), 92 respondents constituting 28.5 percent responded that they do spend between RM1000 and RM10000 (RM13.59–RM135.00) on entertainment for instance on cigarette and family leisure per month, while another 1 respondent representing .3 percent of the total samples indicated that he usually spends RM1000 to RM15000 (RM149.49 – RM203.85) per month on the leisure and entertaining himself and his family with a mean expenditure of RM5,080, whilst the substantial part of the respondents that is 230 respondents equaling 71.2 percent of the total samples indicated that they do not spend money on entertainment and leisure as they considered it less important and that other needs of food and other essential commodities are taken to be more necessary than entertainment.

Furthermore, this study considers property ownership of the respondents as part of the demographic characteristics of the study's samples, particularly, means of transportation, household goods/items, means of communication, and farm implements/tools. The Table 6.34 below summarizes the information on the respondents' means of transportation possession.

Table 6. 34

*Property Ownership of Means of Transportation*

Means of Transportation	Units Owned	Percentage
Car	28	8.7
Lorry	7	2.2
Motor Cycle	100	31.0
Bicycle	33	10.2
Donkey/Camel/Horse	40	12.4

Source: Field Survey Data (2016)

In relation to property ownership and particularly means of transportation Table 6.34 above shows that out of the total valid respondents (323), some 295 representing 91.3 percent indicated that they do not own car, while some respondents on a frequency of 28 and a total percentage of 8.7 indicated that they owned a car, whereas with regards to ownership of a lorry out of the 323 valid responses 316 representing 97.8 percent attested that they do not have lorry, whereas 7 respondents which account for only 2.2 percent indicated that they owned a lorry at least. Similarly, the results of the statistical analysis as indicated in Table 6.34 revealed that out of the 323 valid respondents, 223 which stand at 69.0 percent do not have a motorcycle, while 100 respondents representing 31.0 percent showed that they have a motorcycle at least. Furthermore, the results depicted that out of the 323 valid respondents some 290 responses equaling 89.8 percent indicated they do not have bicycle, whilst the remaining responses totaling 33 frequency representing 10.2 percent indicated ownership of at least a bicycle, and lastly in view of others means of transportation 283 respondents indicating 87.6 percent do not have other means of transportation (donkey, camel, horse, bull e.t.c), while the remaining 40 respondents representing 12.4 percent indicated that they owned either donkey(s), camel(s), horse(s) or bull(s) at least as a means of transportation.

Similarly, the study considered another important issue that is property ownership but in respect of household goods which are very important. In essence ownership or otherwise of the properties gives a clear feature of the household and its head. This includes households' items/goods like a television set, radio, electric cooker e.t.c., and Table 6.35 below shows the number of respondents that owned the different household items.

Table 6. 35

*Property Ownership of Household Items/Goods*

Household Items/Goods	Units Owned	Percentage
Television Set	69	21.4
Radio Set	148	45.8
Washing Machine	2	.6
Fan	66	20.4
Refrigerator	19	5.9
Electric Cooker	8	2.5
Furniture/Sofa set	23	7.1

Source: Field Survey Data (2016)

Table 6.35 above has shown that out of the 323 valid respondents some 254 respondents equaling 78.6 percent had chosen NO signifying that they do not own a television, while the remaining 69 valid respondents representing 21.4 percent indicated that they have at least a television set. While with regards to ownership of Radio set a frequency of 178 respondents amounting to 54.2 percent of the total valid responses indicated that they do not own a Radio set, while a frequency of 148 standing for 45.8 percent of the total valid respondents indicated that they at least owned a Radio set. With respect to washing machine the results of the descriptive statistics of the respondents indicated that 321 representing 99.4 percent out of the 323 valid respondents indicated that they do not own a washing machine, only a frequency of 2 depicting only .6 percent of the entire responses (323) indicated that they own a washing machine.

Similarly, on the ownership of fan (ceiling or standing) 257 respondents accounting for 79.6 percent of the entire valid respondents attested that they do not own a fan, whereas only 66 responses totaling 20.4 percent of the total household heads declared that they owned at least a fan. Furthermore, ownership of a refrigerator was considered by this study and the result of the statistics revealed that a frequency of 304 accounting for 94.1 percent of the usable responses declared that they do not have a refrigerator, while 19 responses totaling 5.9 percent declared that they owned at least a refrigerator. The statistics also revealed that out of the 323 valid responses some 315 respondents representing 97.5 declared that they do not have an electric cooker in their homes, while only 8 responses amounting to 2.5 percent indicated that the ownership of at least an electric cooker at home. Moreover, ownership of furniture/sofa was also considered and the results from the statistics revealed that 300 respondents out of the valid 323 usable respondents representing 92.9 percent declared that they do not have furniture in their homes, whilst 23 responses rate which represent 7.1 percent affirmed that they have furniture in their homes. These have shown that there is poverty of households' usable assets in the study area.

Another important demographic characteristic considered by the study is access to information and communication technology (information capital) which is very vital for keeping the household well-informed and up to date, and in essence enhance their well-being, and the Table 6.36 below indicated the level of ownership like phone set and access to the internet.

Table 6. 36

*Accessibility to Information and Communication Technology*

Access to Information and Communication Technology	Frequency	Percentage
Telephone (mobile/land line)	209	64.7
Internet source (wifi/mobile/internet café/broadband)	48	14.9

Source: Field Survey Data (2016)

Table 6.36 above revealed that 114 respondents representing 35.3 percent of the entire valid responses indicated that they do not have a phone (GSM/Trunk service), while 209 responses equaling 64.7 percent indicated possession of mobile phone by household heads. However, the results also revealed that of the 323 valid responses 275 responses representing 85.1 percent declared that they do not have access to the internet service/network, while 48 respondents representing only 14.9 percent confirmed that they have access to internet which suggest that there is gap in terms of information and communication technology which may seriously affect the households as critical information about livelihoods could be missed.

Lastly, in consideration of the agrarian setting of the study area, the study deemed it important to assess the farming equipment/implement possession of the respondents, therefore, Table 6.37 below indicates the level of ownership of the modern farming tools amongst the respondents.

Table 6.37

*Ownership of Farming Equipment amongst the Respondents*

Possession of farm Implements	Units owned/frequency	Percentage
Tractor	0	0
Plough/Ridger	4	1.2
Water pumping machine	68	21.1

Source: Field survey Data (2016)

Accordingly, considering the area of the study area is agrarian ownership of vital farm implements was considered and the results in the Table 6.37 above revealed that with respect to the ownership of tractor none of the valid respondents indicated ownership of tractor, thus, signifying all the 323 that is 100 percent valid respondents do not have tractor. Similarly, out of the 323 total valid responses 319 totaling 98.8 percent of the

respondents do not have a plough, whereas other 4 respondents which stood at 1.2 percent of the total valid responses indicated that they have plough. Finally, the statistical results presented in Table 6.37 above revealed that, with respect to ownership of water pumping machine which is usually used for dry season farming, 255 valid respondents from the total 323 which represent 78.9 percent confirmed that they do not have water pumping machine, while 68 respondents representing 21.1 percent of the entire valid responses indicated that they own water pumping machines for irrigational farming during dry season.

To sum up, the above discussions on the demographic characteristics of the respondents provides a proper glimpse or an insight into the nature and type of respondents this study dealt with, which further explains the study area in relation to the fundamental objectives of the study as basic information on the respondents like educational background, household size, occupation, house ownership, access to electricity and portable water, loan and subsidy, saving, household goods, level of income and expenditure were examined and discussed.

### **6.3 Frequency Rate of Respondents as per Latent Constructs' Indicators**

This part of the study considers identifying the distribution of livelihood assets, livelihood strategy and government intervention among the respondents which explain the level of access to livelihood assets, type of livelihood strategy being employed, and the level of government support which relates to the level of poverty in the study area (Sokoto State, Nigeria). Therefore in line with Pallant (2010) this study employed descriptive statistics and evaluated the response rate as per individual indicator/measure of the study's latent constructs.

Human asset was measured using 8 items using and 5 Likert scale from “Strongly Disagree to Strongly Agree“. The frequency statistics in the Table 6.38 below captures the level of access to human asset per measuring indicator.

Table 6. 38

*Response Rate as per Indicators of Human Asset (Percentages)*

Indicator	Stongly Disagree/Disagree	Stongly Agree/ Agree	Neutral
Skill training	277 (85.8)	30 (9.2)	16 (5)
Vocational skills	282 (87.3)	28 (8.6)	13 (4)
Farming skills	64 (19.8)	236 (72.4)	23 (7.1)
Western Education	203 (62.9)	101 (31.2)	19 (5.9)
Qur’anic Education	6 (1.8)	310 (96)	7 (2.2)
Physical Ability	76 (23.5)	229 (70.9)	18 (5.6)
Mental Ability	68 (21)	241 (74.6)	14 (4.3)
Good Health Status	55 (17)	253 (78)	15 (4.6)

Source: Field Survey Data (2016)

Note: The figures out of parenthesis stand for frequency of the respondents while figures in the parenthesis stand for percentages.

The above Table 6.38 explains further the distribution of the respondents on the individual indicators measuring human asset in the present study which shows 85.8 percent lack skills acquisition training, 87.3 percent lack vocational skills and 62.9 percent have not acquired western education. However, 72.4 have farming skills, 96 percent acquired Qur’anic education, 70.9 percent physically fit, and 74.6 percent mentally fit, and 78 percent have good health status. This translates to lack of access to human asset as critical components such as knowledge, skills and aptitude which are fundamental to livelihoods accomplishment are lacking amongst the sampled respondents in the study area.

The next construct for consideration is the social asset where the study considers the respondents’ perception as per individual indicator of the latent construct. Table 6.39 below provides more illustration.

Table 6. 39

*Response Rate as per Indicators of Social Asset (Percentages)*

Indicator	Strongly Disagree/Disagree	Strongly Agree/Agree	Neutral
Link to social Network	286 (88.5)	24 (7.4)	13 (4.0)
Social status in the society	256 (79.2)	47 (14.5)	20 (6.2)
Community representation	273 (84.5)	30 (9.2)	20 (6.2)
Political party Affiliation	163 (50.5)	125 (38.7)	35 (10.8)
Association membership	198 (61.3)	90 (27.9)	35 (10.8)
Cooperative society	232 (71.9)	64 (19.8)	27 (8.4)

Source: Field Survey Data (2016)

Note: The figures out of parenthesis stand for frequency of the respondents while figures in the parenthesis stand for percentage.

The above Table 6.39 summarizes the respondents' perception in terms of access to social asset which shows that, the majority of the respondents do not have access to social asset as majority disagree with the questions about the social asset. It has been indicated in the Table above that 88.5 percent have no link to social networks, 79.2 percent do not have any social status in the society and another 84.5 percent do not represent their community at any level of authority, 50.5 percent do not have affiliation with any political party, 61.3 percent are not engaged with any community-based association, and 71.9 percent not involved in cooperative society. This has shown that majority of the respondents do not have access to social asset which is a veritable factor for sustainable livelihoods and poverty reduction.

Similarly, this study considers the distribution of the respondents based on access to physical asset and in its respect, frequency of responses was considered in relation to individual indicator measuring physical asset. The Table 6.40 below shows the distribution.



Table 6. 40

*Response Rate as per Indicators of Physical Asset (Percentages)*

Indicators	Strongly Disagree/Dis Agree	Strongly Agree/ Agree	Neutral
Access to good road	162 (50.2)	149 (46.1)	12 (3.7)
Good transport means	202 (62.5)	111 (34.4)	10 (3.1)
Cement block house	253 (78.3)	53 (16.4)	17 (5.3)
Household goods/assets	264 (81.7)	40 (12.4)	19 (5.9)
Good drinking water	260 (80.5)	41 (12.7)	22 (6.8)
Short distance to water	171 (52.9)	117 (36.2)	35 (10.8)
Good sanitation facility	277 (85.8)	25 (7.7)	21 (6.5)
Electricity supply	251 (77.7)	58 (17.9)	14 (4.3)
Cooking fuel/energy	318 (98.4)	2 (6)	3 (9)
Access to internet	271 (83.9)	43 (13.3)	9 (2.8)
Mean of communication	127 (39.3)	188 (58.2)	8 (2.5)
HH access to school	105 (32.5)	199 (61.6)	19 (5.9)
HH close to market	172 (53.3)	108 (42.4)	14 (4.3)
HH close to hospital	148 (45.8)	158 (48.9)	17 (5.3)

Source: Field Survey Data (2016)

Note: The figures out of parenthesis stand for frequency of the respondents while figure in the parenthesis stand for percentage.

Table 6.40 above has shown the level of response from the respondents in respect of individual measure of the latent construct in which 50.2 percent indicated non access to good road, 62.5 percent lack good means of transportation, 78.3 percent have no house made of cement blocks, another 81.7 percent have no household good/assets, 80.5% have no access to good drinking water, 52.9 percent indicated that they walk a long distance to fetch water. Similarly, 85.8 percent have no access to good sanitation facility, 77.7 percent have no electricity, 98.4 percent have no good cooking fuel/energy source, 83.9 percent do not have internet access while in terms of means of communication (phone) majority that is 58.2 percent indicated they have phone, and also with regards to household access to school 61.6 percent indicated their households have access to school. Furthermore, in terms of closeness to the market majority 42.4 percent indicated that their households are not close to the market whereas in relation to closeness to hospital 48.9 percent indicated that their households are close to

hospital. Therefore considering the rate of response in respect of individual indicator there is apparent lack of access to physical asset in the study area.

Moreover, the study also considers the respondents distribution concerning accessibility to financial asset in the study area, therefore, Table 6.41 below substantiates the level of accessibility to financial asset as per individual indicators.

Table 6. 41

*Response Rate as per Indicators of Financial Asset (Percentages)*

Indicators	Never	Rarely	Sometimes	Often	Always
Saving	182 (56.3)	97 (30.0)	30 (9.3)	12 (3.7)	2 (.6)
Livestock	177 (54.8)	65 (20.1)	45 (13.9)	16 (5.0)	20 (6.2)
Jewelries	284 (87.9)	36 (11.1)	2 (.6)	1 (.3)	NA
Monthly pension	299 (92.6)	23 (97.1)	NA	NA	1 (.3)
Monthly salary	213 (65.9)	13 (4.0)	3 (.9)	13 (4.0)	81 (25.1)
Cash transfer	277 (85.8)	37 (11.5)	9 (2.8)	NA	NA
Family remittance	230 (71.2)	59 (18.3)	20 (6.2)	13 (4.0)	1 (.3)
Trading income	200 (61.9)	36 (11.1)	28 (8.7)	43 (13.4)	16 (5.0)
Labor income	225 (69.7)	39 (12.1)	25 (7.7)	28 (8.7)	6 (1.9)

Source: Field Survey Data (2016)

Note: The figures outside parenthesis stand for frequency of the respondents while the figures in parenthesis stand for percentage and NA represents not-applicable signifying no response in that regard.

The Table 6.41 above explains the proportion of respondents per indicator measuring access to financial asset in the study area in which it shows that 56.3 percent never saved money, while 54.8 percent never raised livestock as disposable assets and another 87.9 percent never have jewelry as liquid asset. Similarly, 92.6 percent never receive pension and another 65.9 percent never receive monthly salary, while 85.8 percent never receive government financial assistance or cash transfer while another 71.2 percent never receive remittance from family members or children. Likewise, 61.9 percent never earn income from trading, and another 69.7 percent never make income from labor or manual work. These statistics submit that there is poor access to financial asset among the respondents in the study area.

In as similar situation, the study considers the frequency rate of response in relation to accessibility to natural asset, therefore, Table 6.42 below expatiates on the level of response per measuring indicator of the latent construct.

Table 6. 42

*Response Rate as per Indicators of Natural Asset (Percentages)*

Indicator	Strongly Disagree/Disagree	Strongly Agree/Agree	Neutral
Enough land for farming	125 (38.7)	185 (57.3)	13 (4.0)
Fertile land	143 (44.3)	139 (43.1)	41 (12.7)
Access water for fishing	256 (79.3)	32 (17)	35 (10.8)
Access water for irrigation	254 (78.7)	41 (12.6)	28 (8.7)
Access mineral resources	270 (83.6)	24 (7.5)	29 (7.5)
Access economic trees	258 (79.9)	48 (14.9)	17 (5.3)
Access forest resources	277 (85.7)	26 (8.0)	20 (6.2)
Access grass for sell	238 (73.7)	57 (17.6)	28(8.7)

Source: Field Survey Data (2016)

Note: The figures outside parenthesis stand for frequency of the respondents while the figures in parenthesis stand for percentage.

The Table 6.42 above illustrates the frequency rate of the respondents with regard to measuring items of natural asset in which 57.3 percent indicated that they have enough land for farming activities, while 44.3 percent have no fertile land for cultivation of crops. Similarly, 79.3 percent do not have access to water resources for fishing, and another 78.7 percent does not have access to water resources for irrigational farming whereas 83.6 percent indicated that they have no access to mineral resources for commercial purposes. In a similar vein, 79.9 percent revealed that they have no economic trees like mango, orange, pawpaw, cashew e.t.c., while 85.7 percent showed that they do not have access to forest resource for commercial firewood, and another 73.7 percent indicated that they do not access grass and shrub for commercial activities. The frequency statistics revealed that majority of the respondents lack the basic elements of natural asset except land, which virtually translates to poor access to natural asset in the study area (Sokoto State).

Furthermore, this study evaluated the livelihood strategy or coping mechanisms employed by the respondents in Sokoto State to absorb the threat of poverty and challenges facing their livelihoods, therefore, Table 6.43 below explains further the different coping strategies being practiced by the respondents.

Table 6. 43

*Response Rate as per Indicators of Livelihood Strategy (Percentages)*

Indicators	Never	Rarely	Sometimes	Often	Always
Formal work	226 (70.0)	3 (9)	1 (.3)	1 (.3)	92 (28.5)
Subsistence farming	43 (13.3)	10 (3.1)	17 (5.3)	99 (30.7)	154 (47.7)
Off-farm labor	207 (64.1)	56 (17.3)	27 (8.4)	19 (5.9)	14 (4.3)
Motorcycling	270 (83.6)	33 (10.2)	11 (3.4)	9 (2.8)	NA
Raising livestock	143 (44.3)	81 (25.1)	46 (14.2)	39 (12.1)	14 (4.3)
Petty trading	197 (60.7)	48 (14.9)	22 (6.8)	37 (11.5)	19 (5.9)
Migrate to city/town	225 (69.7)	40 (12.4)	30 (9.3)	18 (5.6)	10 (3.1)
Migrate to other country	234 (72.4)	37 (11.5)	19 (5.9)	25 (7.7)	8 (2.5)
Borrow money from commercial banks	288 (89.2)	26 (8.0)	8 (2.5)	1 (.3)	NA
Borrow money from from government institutions	283 (87.6)	33 (10.2)	6 (1.9)	1 (.3)	NA
Borrow money from family members	128 (39.6)	81 (25.1)	77 (23.8)	26 (8.0)	11 (3.4)
Selling asset to buy food	181 (56.0)	77 (23.8)	47 (14.6)	15 (4.6)	3 (9)
Rely on less expensive food	51 (15.8)	32 (9.9)	33 (10.2)	94 (29.1)	113 (35.0)
Borrow food	101 (31.3)	88 (27.2)	81 (25.1)	45 (13.9)	8 (2.5)
Purchase food on credit	85 (26.3)	64 (19.8)	90 (27.9)	66 (20.4)	18 (5.6)
Reduce number of meals	62 (19.2)	26 (8.0)	54 (16.7)	141 (43.7)	40 (12.4)

Source: Field Survey Data (2016)

Note: The figures outside parenthesis stand for frequency of the respondents while the figures in parenthesis stand for percentage and NA represents not-applicable signifying no response in that regard.

The illustrations in the Table 6.43 above explained coping mechanisms or livelihood strategies being employed by the respondents in the study area which give insight into dominant livelihood activities in Sokoto State. The frequency statistics shows that majority of the respondents that is 226 do not engage in any formal work with government or private organization to support their livelihoods, while 253 respondents depend on subsistence farming to cope with the threat of poverty and shocks in the study area. However, 207 respondents indicated that they do not engage in off-farm

labor to support their livelihoods, whereas with regard to commercial motorcycling 270 respondents revealed that they do not engage in commercial motorcycling, and another 143 respondents submitted that they never raised livestock to sell for future use. Moreover, on petty trading majority 197 respondents indicated that they never engage in trading as a means of supporting livelihoods, and another 225 respondents indicated that they never migrate to the city to enhance their livelihoods, while 234 respondents indicated that they never migrate to other country in search for the greener opportunities to secure their livelihoods.

Additionally, some 288 respondents (majority) indicated that they never borrow money from commercial banks to support their livelihoods while on borrowing from government microfinance institutions 283 respondents showed that they never borrow money from microfinance institutions to strengthen their livelihoods. Similarly, on borrowing from members of the family 128 respondents revealed that they never borrow money from members of their families, whereas 181 respondents indicated that they never sell household asset to buy food for consumption while 240 respondents showed that they rely on less expensive food to cope with the challenges of poverty and vulnerability to it. Similarly, some 134 respondents revealed that they usually borrow food from people to feed their households, while with regard to buying food on credit, cumulatively some 174 respondents indicated that they use to buy food on credit to feed their families while in respect to reducing number of meals per day some 235 respondents indicated that they usually reduce the number of meals they consume a day so as to sustain their livelihoods and cope with vulnerability to poverty.

Accordingly, in line with the description in the Table 6.43 above it can be submitted that livelihood or coping strategy is not well established in the study area as the study considers frequency with which a particular activity is employed, therefore the study centers on “Often and Always” options as most frequent and base on that subsistence farming, purchasing food on credit, borrowing of food from people and reducing the number of meals per day are major coping or livelihood strategies mostly devised in the study area (Sokoto State). However, what has become obvious is that majority of the respondents have not devised effective livelihood strategy to sustain and enhance their livelihoods which has a negative effect on the sustainability of their livelihoods and thereby making them more vulnerable to poverty.

Additionally, this study explored the effect of government intervention in the study area and in doing that respondents were provided with wide range questions and option with a view to make it in-depth. The below Table 6.44 substantiates on the responses rate of the samples on government intervention in the study area.

Table 6. 44

*Response Rate as per Indicators of Government Intervention (Percentages)*

Indicator	Never	Rarely	Sometimes	Often	Always
Government-financial support	286(88.5)	24 (7.4)	13 (4.0)	NA	NA
Government-social welfare package	288(89.2)	32 (9.9)	3 (.9)	NA	NA
Government support to small enterprises	273(84.5)	42 (13.0)	8 (2.5)	NA	NA
Poverty-reduction policies are impacting	254(87.6)	60 (18.6)	9 (2.8)	NA	NA
Poverty-reduction policies are pro-poor	261(80.8)	49(15.2)	11 (3.4)	1 (.3%)	1 (.3%)
Government-beneficiary consultation	295(91.3)	28 (8.7)	NA	NA	NA
Participation in poverty reduction policy making	300(92.9)	22 (6.8)	1 (.3)	NA	NA
Poverty-reduction institutions are effective	276(85.4)	40 (12.4)	7 (2.2)	NA	NA
Government subsidy on Agriculture	234(72.4)	58 (18.0)	27 (8.4)	4 (1.2)	NA
Government incentives on food production	243(75.2)	53 (16.4)	22 (6.8)	5 (1.5)	NA

Source: Field Survey Data (2016)

Note: The figures outside parenthesis stand for frequency of the respondents while the figures in parenthesis stand for percentage and NA represents not-applicable signifying no response in that regard.

The illustrations in Table 6.44 above provided detailed frequency rate on the perception of respondents on government intervention in the study area and the statistical outcome suggests that there is apparent absence or poor government support which has an effect on the sustainability of livelihoods. Specifically, it has been shown that 286 respondents out of the total usable 323 samples never receive government financial support, while another 288 respondents of the total respondents never enjoy or receive government social welfare package. Additionally, 273 respondents never enjoy support from government to establish or sustain small-scale businesses, and another 254 respondents submitted that government poverty reduction policies have no effect in the study area while 261 respondents also asserted that poverty reduction policies are not pro-poor in the study area. Similarly, 295 respondents posited that they were never consulted by the government on poverty-related issues or decision affecting their households, whereas 300 respondents pointed that they were never carried along in the design or implementation of poverty reduction-related programs. Furthermore, 276 respondents emphasized that poverty reduction institution in the study area are never effective, and another 234 respondents declared that never enjoy government subsidy on Agriculture, and lastly some 243 respondents indicated that they never enjoy incentive from the government towards food production.

Accordingly, the frequency of the respondents' perception on government intervention affirms that there is lack of government appropriate support in the study area, which could have positive effect on the livelihoods of the inhabitants of the study area thereby

cushioning the effect of vulnerability to poverty. Basically, the descriptive statistics indicated that there is wide gap between government and the rural communities in Sokoto State as the perception showed that the greatest majority of the respondents do not feel the impact of government which craved for the adoption of a proper mechanism or framework that would enhance government-community interface that would monitor progress concerning rural and community development in the study area. In essence, a better and effective mechanism need to be put in place to monitor and communicate the level of development and wellbeing of the rural inhabitants to the government which by and large create government-community synergy towards community development on one hand, and community involvement and participation on community development policy-action in Sokoto State.

Additionally, this study considers the frequency of the respondents per indicator on their perception about poverty status as to whether their level of livelihoods accomplishment impacts on the overall well-being of their households, therefore, Table 6.45 below describes whether fundamentals of sustainable poverty reduction are attained by the respondents or not.



Table 6. 45

*Response Rate as per Indicators of Sustainable Poverty Reduction (Percentages)*

Indicator	Strongly Disagree/Disagree	Strongly Agree/Agree	Neutral
Increased income	271 (83.9)	31 (9.6)	21 (6.5)
Increased saving and investment	272 (84.2)	17 (5.2)	34 (10.5)
Assets secured	278 (86.1)	8 (2.5)	37 (11.5)
Food secured	213 (65.9)	70 (21.7)	40 (12.4)
Accessed basic-infrastructure	276 (85.5)	30 (9.2)	17 (5.3)
Children can attend school	110 (34.1)	175 (54.2)	38 (11.8)
Can meet clothing need	154 (47.7)	85 (26.4)	84 (26.0)
Good shelter	186 (57.5)	82 (25.4)	55 (17.0)
Improved health	108 (33.4)	143 (41.4)	81 (25.1)
Improved skills and capabilities	135 (41.8)	109 (33.7)	79 (24.1)

Source: Field Survey Data (2016)

Note: The figures outside parenthesis stand for frequency of the respondents while the figures in parenthesis stand for percentage.

The above Table 6.45 encapsulate the perceptions of the respondents in terms of whether the goals of attaining sustainable livelihoods and poverty reduction are achieved, the statistics show that some 271 respondents (83.9 percent) assert that their income has not increase while 272 respondents (84.2 percent) indicated that they could not either save or invest therefore there is no improvement in that direction. Similarly, 278 respondents (86.1 percent) affirmed that their households are not asset secure, and another 213 respondents (65.9 percent) submitted that their households are not food secure thus raising the issue of food insecurity in the households. Furthermore, 276 respondents (85.5 percent) indicated that they have no access to basic infrastructure or social amenities, while with regards to children's access to school 175 respondents (54.2 percent) indicated that they can send their children to school. However, 154 respondents (47.7 percent) said they cannot meet the clothing need of their households, whereas 186 respondents (57.5 percent) did not agree that their houses/shelters are good enough and another 143 respondents agree that their households have satisfactory

health status while 135 respondents (41.8 percent) indicated that their skills and capabilities have not improved.

What has become obvious from the above discussion is that, the frequency distribution from the descriptive statistics explained how respondents of the present study shared their perception with the study as per the individual indicators measuring the latent constructs of the study, which further provided insight into the level of access to livelihood assets, livelihood strategy, as well as level of government support enjoyed by the respondents in the study area which in turn shaped or explained their livelihood outcomes and poverty status.

Accordingly, the study considers in the succeeding part the descriptive statistics of the study's latent constructs which impliedly described the average or mean response by the respondents which further described the level of agreement or disagreement with the questions or statements of the instruments of the study.

#### **6.4 Descriptive Statistics of Latent Constructs**

This section basically looked at descriptive statistics of the latent constructs of the present study. It explained the mean and the standard deviation (i.e., the aggregate of all detected outcomes divided by the entire events, (i.e.,) mean, and the used measure to calculate equal discrepancy of the data set values) of the constructs of the study (Pallant, 2010). Therefore, the means and standard of the present study were examined and presented in Table 6.46 below.

Table 6. 46

*Descriptive Statistics of Variables: Mean and Standard Deviation*

Construct	Sample	Mean	Std. Deviation
Human Asset	323	3.09	.67
Social Asset	323	1.93	.82
Physical Asset	323	2.23	.65
Financial Asset	323	1.56	.39
Natural Asset	323	2.06	.77
Livelihood Strategy	323	2.12	.39
Government Intervention	323	1.26	.27
Sustainable Poverty Reduction	323	2.34	.61

Source: Descriptive Statistics SPSS Output

It can be observed from Table 6.46 above that, mean and the standard deviation for human asset (HA) is 3.09 and 0.67 accordingly and this impliedly showed that respondents of this study were somewhat averagely disagree in answering the question concerning of the variable. While the mean and standard deviation of other predictors (IVs) is social asset (SA) 1.93 and 0.82 showed that the respondents of the present study disagreed with the statement of the questions. Likewise, in relation to physical asset (PA) with a mean value of 2.32 and standard deviation value of 0.65 indicated that the respondents averagely disagreed with the statements. With regards to financial asset (FA) a mean of 1.56 and a standard deviation of 0.39 suggested that respondents averagely had chosen rarely. On natural asset (NA) the descriptive statistics results revealed that respondents averagely disagree with the statement, thus the mean 2.06 and standard deviation of 0.77.

Similarly, with respect to livelihood strategy (LS) the results indicated a mean of 2.12 and a standard deviation of .39, meaning that the respondents had averagely chosen rarely. In the case of government intervention (GI) which is the moderating (interacting) variable the result revealed a mean of 1.26 and standard deviation of .27 which implied that respondents substantially have chosen never; and lastly sustainable

poverty reduction (dependent variable) has a mean score of 2.34 and a standard deviation of 0.61, thus signifying that the respondents averagely selected disagree. Notwithstanding, descriptive statistics results of all the study's latent constructs depicted that respondents had chosen, averagely, disagree option for human asset, social asset, physical asset, natural asset, and sustainable poverty reduction, and rarely option for financial asset and livelihood strategy, and never for government intervention. While with respect to standard deviation all the data points are within the range in relation to the mean since all the standard deviation values have not reached 1.

Accordingly, going by the results of the descriptive statistics averagely respondents in the study area do not have access to livelihood assets and do not devise comprehensive livelihood strategy to enhance their livelihoods outcomes and also they do not enjoy government support or intervention that will enable them to continuously access livelihood assets, therefore substantially they are poor, as poor or lack of access to the assets, poor livelihood strategy, and absence of government intervention or support are lacking. Consequently, for sustainable poverty reduction to be achieve in Sokoto State-Nigeria, livelihood assets need to be accessed, effective livelihood strategy need to be employed and appropriate government intervention or support need to be ensured by the Sokoto State government and Nigerian government in general.

## **6.5 Summary of Chapter**

The chapter discussed on the demographic characteristics of the respondents which include the ages of the respondents, gender, nationality, and marital status. Similarly, it captured the educational level of the respondents, religious affiliation, and sizes of

the households, number of wives as well as the main and part-time occupation of the respondents. The chapter further dwelt on training attended by the respondents, their health status, and ownership of a house or otherwise, and access to social amenities like electricity and pipe borne water. Additionally, the chapter evaluated the distance usually covered by the respondents to access towns and cities, market, workplace and hospital. It further considered the level of savings, access to government subsidy, and accessibility to loan. Other issues considered by the chapter include the level of income, and its type, the total monthly income of the respondents, type of expenditure, and the level of spending by the respondents on consumption and other essential services in their respective households. Additionally, the chapter examined property ownership among the respondents like means of transportation (car, lorry, motorcycle e.t.c), household goods (television, radio, washing machine e.t.c), and mean of communication like mobile phone and internet service as well as ownership of farming equipment like tractor, plough and water pumping machine for irrigational farming

Similarly, the rate of respondents' responses on the individual indicators measuring the study's latent constructs, which provided detailed perceptions of the respondents as per their understanding on access to livelihood assets, the livelihood strategy and livelihood outcomes referred to as sustainable poverty reduction were discussed. It further provided the descriptive statistics account of the study's latent constructs using mean and standard deviation.

To sum up, the chapter provided insight into the features of the respondents as well as response rate per indicator measuring the study's constructs, and an overall account of perception of the respondents about the constructs of the study.

## **CHAPTER SEVEN**

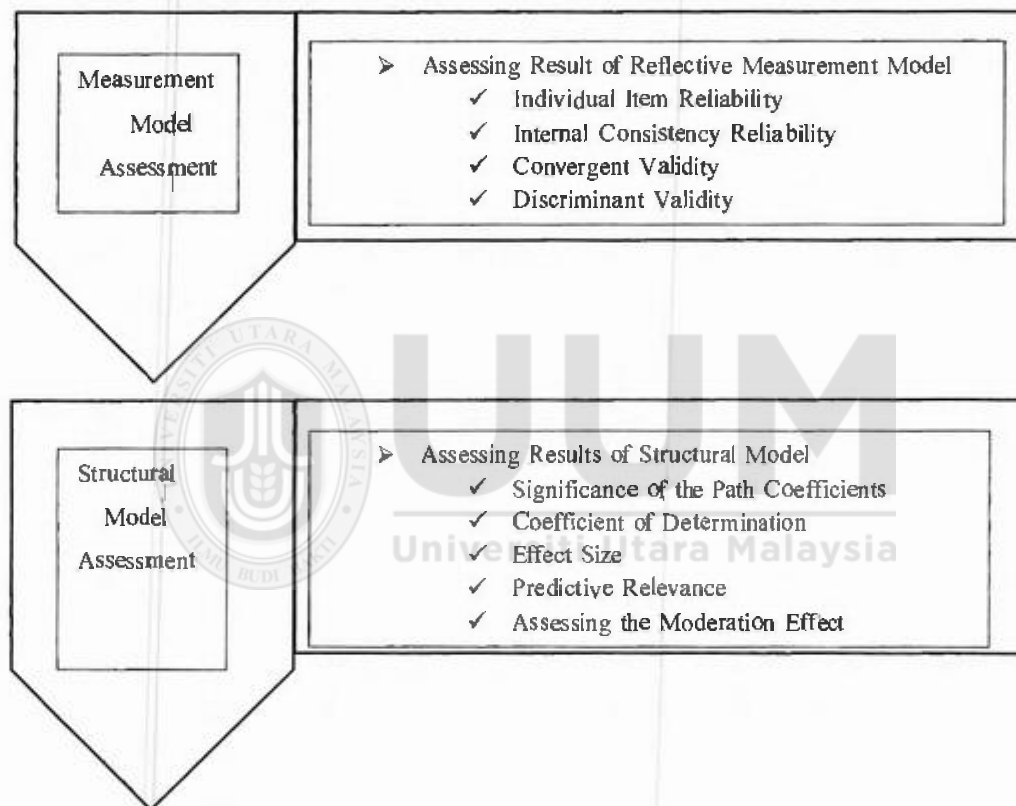
### **RELATIONSHIP AMONG VARIABLES AND THEIR IMPACT ON HOUSEHOLDS**

#### **7.1 Introduction**

In this chapter path models were used to illustrate the hypothesized relationships between variables, using structural equation modeling (SEM) in line with (Hair *et al.*, 2011). Variables are shown in the path model in oval shape, whilst the items/indicators which represent the variables are shown in a rectangular shape as illustrated in the path models (Hair *et al.*, 2014). It has been posited that arrows linking between variables and between indicators and variables indicate the relationship amongst them, and the arrows are usually one-headed, indicating the direction of the relationship in PLS-SEM (Hair *et al.*, 2011; Hair *et al.*, 2014). Hair *et al.* (2014) and Henseler *et al.* (2009) asserted that, PLS-SEM has two set of models, these are the measurement model and the structural model (which are also known as the inner model, and the outer model).

In particular, measurement model otherwise known as inner model connotes a component of the path model which contains items and their relationships with their corresponding latent variables. Consequently, this study is concerned with one measurement model (i.e., reflective measurement model). A reflective measurement entails a measurement model where the direction of the arrows starts from a latent Construct to its measuring items/indicators implying that it is the latent construct that produced the measures or the indicators of the latent construct.

Whereas structural model is the component of the PLS-SEM path modeling that deals with latent variables and the relationship amongst them. Protocols followed for the assessment of the PLS-SEM path modeling by the present study (cf Klärner, Sarstedt, Hoeck, & Ringle, 2013; Hair *et al.*, 2014; Henseler *et al.*, 2009) are presented by the Figure 7.1 below.

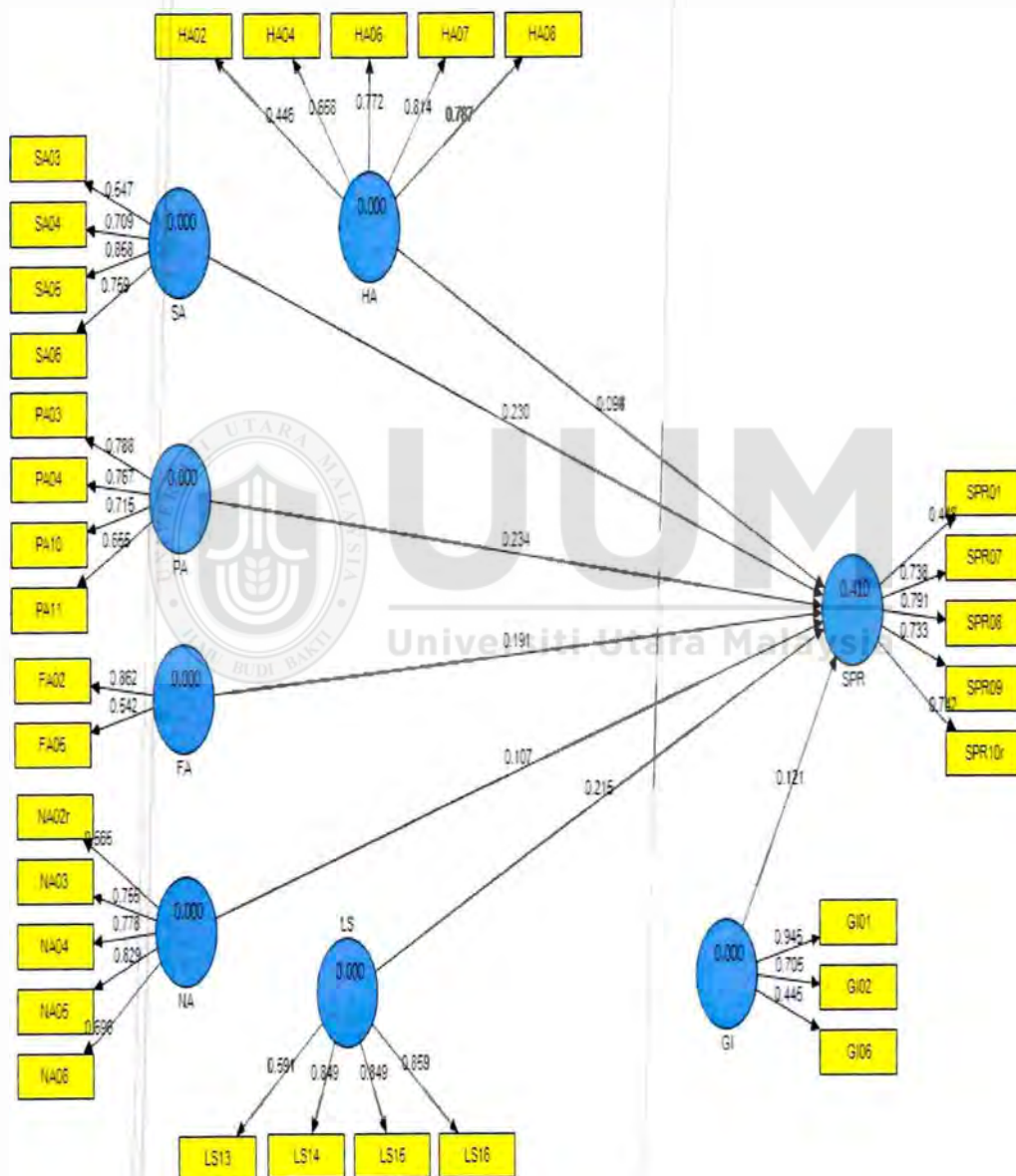


**Figure 7.1** Two-step process of PLS-SEM path assessment

## 7.2 Assessment of the Measurement Model

In assessing the measurement model of this study, the researcher carried out basic reliability assessment of the individual items measuring the study's latent constructs, the construct reliability (i.e., internal consistency reliability), discriminant validity, and convergent validity, since the construct of this study are reflective in line with (Hair *et*

*al.*, 2014; Henseler *et al.*, 2009). The Figure below represents full model of this study from which reliability assessments were drawn as mentioned initially.



**Figure 7.2 Measurement Model (Full Model)**



### 7.2.1. Individual Item Reliability

In this study, the researcher evaluated the individual item reliability through checking of the outer loadings of the constructs' measures (Duarte & Raposo, 2010; Hair *et al.*, 2014; Hair *et al.*, 2012; Hulland, 1999). In compliance with the rule of thumb for retaining of items within the loading threshold of 0.4 and 0.7 (Hair *et al.*, 2011; Hair *et al.*, 2014), it was found that out of 81 items, 32 items reached the required loading of at least .40 coupled with their relevance in measuring their respective constructs, thus suitable for further analysis in line with (Donnellan, Oswald, Baird, & Lucas, 2006). Donnellan *et al.* (2006) argued that small indicators can be used to measure a construct and that an item with a loading of .40 is good for measurement, thus this study retained items with at least 0.44 and removed all items that failed to reach at least .40. However, in the context of this study financial asset was measured using 2 items (see Chen *et al.*, 2013; Kamaruddin, & Baharuddin, 2015) who measured financial asset using 2 items and literature also justified the ability of small items to measure a construct (see Donnellan *et al.*, 2006; Hair *et al.*, 2011; Hair *et al.*, 2014, Hair *et al.*, 2016).

Therefore based on the foregoing discussion in the main model 32 items were upheld as their loadings range between 0.44 and 0.94, and the items include {HA02, HA04, HA06, HA07 & HA08 (for human asset); SA03, SA04, SA05 & SA06 (for social asset); PA03, PA04, PA10 & PA11 (for physical asset); FA02 & FA05 (for financial asset); NA03, NA03, NA04, NA05 & NA08 (for natural asset); LS13, LS14, LS15 & LS16 (for livelihood strategy); GI01, GI02 & GI06 (for government intervention); and SPR01, SPR07, SPR08, SPR09 & SPR10 (for sustainable poverty reduction).

Next consideration for assessment is internal consistency reliability (refer to Table 7.1 below) for details.

### **7.2.2 Internal Consistency Reliability**

Internal consistency reliability means the degree with which all items are measuring same construct (Bijttebier *et al*, 2000; Sun *et al*, 2007). Basically, in assessing internal consistency reliability coefficient (Cronbach) alpha and composite reliability are the widely used evaluators (Peterson, & Kim, 2013). This study employed and utilized composite reliability coefficient for the assessment of internal consistency of the measures.

The justification for the use of composite reliability was premised on; (a) composite reliability coefficient avails lesser biased assessment rather than the Cronbach's alpha for the simple fact that unlike the former (CR), Cronbach's coefficient alpha presumes that individual items contribute to the construct not minding to assess the relative individual loading/contribution of each item (Barclay, Higgin, & Thomption, 1995; Gotz, Liehr-Gobbers, & Krafft, 2010). Accordingly, for the details of the composite reliability values refer to Table 7.1 below.

Table 7. 1

*Reliability and Convergent Validity*

Constructs	Items	Loadings	Average Variance Extracted	Composite Reliability
Financial Asset	FA02	0.86	0.52	0.70
	FA05	0.54		
Government Intervention	GI01	0.94	0.53	0.76
	GI02	0.70		
	GI06	0.44		
Human Asset	HA02	0.45	0.50	0.83
	HA04	0.66		
	HA06	0.77		
	HA07	0.81		
	HA08	0.79		
Livelihood Strategy	LS13	0.59	0.63	0.87
	LS14	0.85		
	LS15	0.85		
	LS16	0.86		
Natural Asset	NA02	0.57	0.53	0.85
	NA03	0.76		
	NA04	0.78		
	NA05	0.83		
	NA08	0.70		
Physical Asset	PA03	0.79	0.54	0.82
	PA04	0.77		
	PA10	0.71		
	PA11	0.66		
Social Asset	SA03	0.55	0.53	0.81
	SA04	0.71		
	SA05	0.86		
	SA06	0.76		
Sustainable Poverty Reduction	SPR01	0.45	0.50	0.82
	SPR07	0.74		
	SPR08	0.79		
	SPR09	0.73		
	SPR10	0.74		

Source: Simulation by Researcher

As illustrated in the Table 7.1 above all the retained indicators have loadings within the threshold, although some loadings are not up to .70, but are already beyond the critical value of .40 and by removing them significant change may not hold concerning

the CR, as such all the items according to Hair *et al.*, (2014), are reliable about measuring their respective constructs.

Similarly, with respect to the internal consistency of the constructs Table 7.1 above has shown that all the reflective construct of the study attained the required threshold .70 in terms of composite reliability as suggested by (Bagozzi & Yi, 1988; Hair *et al.* 2011, Hair *et al.*, 2014). Precisely, all the constructs of the study range between 0.7 and 0.87, in terms of composite reliability, therefore taking into consideration the rule of thumb of 0.70, the researcher concluded that all the constructs of the study are reliable because their composite reliability values are in line with the requirement (cf Hair *et al.*, 2014). The next assessment deals with the evaluation of convergent validity.

### 7.2.3 Convergent Validity

Convergent validity deals with the assessment of reflective constructs' convergent validity which assesses how a certain item accurately measures the construct it intends to measure while relating positively with other alternatives measures of the same construct (Hair *et al.*, 2006). A particular construct is presumed to have convergent validity whenever its indicators converged and or have a high ratio of variance (Hair *et al.*, 2014), thus they argued that the most suitable and common way of determining the convergent validity of the constructs that are reflective in nature is the assessing of their average variance extracted (AVE). They continuously posited that the AVE is the overall mean/average of the squared loading of the entire indicators of a particular construct. It has been suggested that an AVE value of 0.50 or beyond/above shows that the construct bears convergent validity (Chin, 1998b; Hair *et al.*, 2011). Reasonably, this threshold of 0.50 is said to depict that, the latent construct accounts

for half (50 percent) variance of its items. Therefore, based on the threshold of 0.5 as recommended by above literature, all the reflective constructs of the study (after PLS-SEM algorithm) have attained 0.5 average variance extracted (AVE) requirements as indicated or shown in Table 7.1 above. The issue of concern is the assessment of discriminant validity.

#### 7.2.4 Discriminant Validity

Discriminant validity is another way of assessing construct validity for reflective construct. It deals with the extent with which a particular construct is exclusively different from other constructs of a model in terms of empirical values (Duarte & Roposo, 2010; Hair *et al.*, 2014). It has been posited that when a latent reflective construct is different and captures issues and events not characterized by other latent reflective constructs, it means that discriminant validity exists (Barroso, Carrion, & Rolden, 2010; Hair *et al.*, 2014).

Fundamentally, two approaches of evaluating the discriminant validity exist (Hair *et al.*, 2014). The first approach used by this study is what has been referred to as Fornell-Lacker criterion. Using this method, a reflective construct is said to have discriminant validity when its square root of AVE is higher than that of its correlation with every other reflective construct within the same model (Fornell-Lacker, 1981). The rationality behind the approach is that when AVE's square root of a latent reflective construct is higher than the correlation between it and other constructs, it signifies that a specific construct shares more variance with its related items than with the remaining constructs of the same model, thus, it is logical to say that such a reflective construct is different from the other constructs (Hair *et al.*, 2014). In summary, it is right to say

that all the reflective constructs of this study have accomplished discriminant validity as indicated in Table 7.2 below.

Table 7. 2

*Discriminant Validity (Fornell-Lacker Criterion)*

	FA	GI	HA	LS	NA	PA	SA	SPR
FA	0.72							
GI	-0.04	0.73						
HA	0.34	0.13	0.71					
LS	0.00	0.00	-0.11	0.80				
NA	0.31	0.04	0.29	-0.07	0.73			
PA	0.32	-0.04	0.44	0.19	0.14	0.73		
SA	0.30	-0.06	0.41	-0.04	0.33	0.30	0.73	
SPR	0.40	0.11	0.38	0.23	0.29	0.46	0.42	0.70

Source: Simulation by Researcher

Note: All the shaded figures stand for the square roots of latent constructs' AVEs.

As it can be observed from Table 7.2 that, all the constructs of the present study attained discriminant validity, as all the square roots of the constructs' corresponding AVEs are higher than their association with the other constructs. Thus, it is right to observe that every construct of this study is uniquely different from the others. It suffices to say that each of the constructs of the study is exclusively different as it encapsulates issues that are not captured by other constructs of this study in line with Fornell-Lacker (1981) criterion perspective. Similarly, with regards to the second approach of assessing discriminant validity of the reflective constructs, this study further employed evaluation method for the cross loading of the respective item/indicators as suggested by (Hair *et al.*, 2014).

Conventionally, to ascertain the discriminant validity of a reflective latent construct using cross loading, all its items loadings must be higher than their parallel loadings of the other constructs (see Chin, 1998b). Cross loading has been adjudged to be more

substantial in terms of assessing discriminant validity (Hair *et al.*, 2014), therefore based on this assumption this study also considered cross loading method and thus displayed in Table 7.3 below.

Table 7. 3

*Measurement Model: Discriminant Validity (Cross Loading)*

Construct	FA	GI	HA	LS	NA	PA	SA	SPR
FA02	0.86	0.00	0.21	-0.01	0.36	0.17	0.23	0.35
FA05	0.54	-0.07	0.32	0.01	0.02	0.35	0.22	0.21
GI01	-0.02	0.94	0.14	-0.04	0.06	-0.04	-0.02	0.12
GI02	-0.07	0.70	0.02	0.10	-0.03	0.00	-0.08	0.05
GI06	0.01	0.44	0.09	-0.01	0.00	-0.07	-0.10	0.03
HA02	0.23	0.02	0.45	0.04	0.28	0.22	0.16	0.24
HA04	0.23	0.00	0.66	0.03	0.12	0.51	0.36	0.37
HA06	0.22	0.15	0.77	-0.21	0.22	0.16	0.25	0.17
HA07	0.23	0.16	0.81	-0.17	0.20	0.22	0.29	0.21
HA08	0.26	0.17	0.79	-0.15	0.19	0.24	0.29	0.23
LS13	-0.13	-0.12	-0.29	0.59	-0.14	0.03	-0.10	0.06
LS14	0.05	0.08	-0.02	0.85	-0.05	0.18	-0.02	0.22
LS15	0.05	-0.01	-0.06	0.85	-0.07	0.15	0.00	0.15
LS16	-0.05	-0.04	-0.12	0.86	-0.04	0.17	-0.05	0.22
NA02	0.33	0.15	0.23	-0.14	0.57	0.10	0.15	0.22
NA03	0.15	-0.03	0.14	0.05	0.76	0.14	0.22	0.19
NA04	0.15	0.01	0.19	0.03	0.78	0.10	0.25	0.17
NA05	0.28	-0.06	0.25	0.01	0.83	0.16	0.30	0.26
NA08	0.20	0.07	0.20	-0.19	0.70	0.02	0.26	0.20
PA03	0.22	0.01	0.30	0.22	0.14	0.79	0.18	0.34
PA04	0.21	0.00	0.21	0.19	0.01	0.77	0.11	0.34
PA10	0.26	-0.14	0.33	0.13	0.09	0.71	0.26	0.34
PA11	0.25	0.01	0.45	0.01	0.19	0.66	0.34	0.32
SA03	0.30	-0.09	0.21	-0.01	0.34	0.19	0.55	0.19
SA04	0.19	0.04	0.32	-0.15	0.22	0.10	0.71	0.32
SA05	0.22	-0.04	0.40	-0.02	0.26	0.26	0.86	0.35
SA06	0.20	-0.11	0.24	0.06	0.19	0.32	0.76	0.32
SPR01	0.31	-0.04	0.16	0.17	0.27	0.22	0.18	0.45
SPR07	0.36	0.02	0.34	0.18	0.18	0.45	0.31	0.74
SPR08	0.28	0.04	0.20	0.21	0.13	0.40	0.29	0.79
SPR09	0.22	0.17	0.29	0.07	0.27	0.19	0.33	0.73
SPR10	0.21	0.18	0.32	0.17	0.20	0.28	0.33	0.74

Source: Simulation by Researcher

It can be seen from the Table 7.3 above that all the latent variables (reflective) of this study have discriminant validity based on the cross-loading evaluation which depicts that all colored indicator loadings of the individual construct are greater in relation to their related loadings crosswise (diagonally). In sum, using all the discriminant validity assessment methods the latent construct of this study had achieved discriminant validity.

### 7.3 Assessment of the Structural Model

After the assessment of the measurement model (Inner Model), the research further evaluated the structural model (known as outer model) results and presented same in the present section. The structural equation modeling in data analysis basically deals with the examining the predictive capabilities of the outer model as well the presumed relationship between the constructs. In trying to achieve that this study analyzed the direct relationship hypotheses as well as the moderating relation relationship (hypotheses) using bootstrapping. Bootstrapping procedure of the PLS-2 was utilized while 5000 bootstrap samples and valid study's 323 cases were deployed to examine the weight (significance) of the paths coefficients in both the direct and indirect relationships a suggested (Hair *et al.*, 2014; Henseler & Sarstedt, 2013). However, since the concern of this study is to; (a) empirically assess (examine) the relationship between the (IVs) predictor variables (human asset, social asset, physical asset, financial asset, natural asset and livelihood strategy); and the criterion variable/dependent variable (sustainable poverty reduction); and (b) to ascertain the moderating effect (role) of government intervention GI on the perceived relationship between the predictors and criterion variables. In line with the above two different structural (outer) models were developed and assessed by the researcher.



This study developed and assessed two structural models in compliance with the position of Baron and Kenny (1986), Frazier, Tix, and Barron, (2004), Little, Todd, Bovaird, Preacher, and Crandall (2007), that a structural model involving moderation relationship should explore two (2) different models, where the first outer (structural) model evaluates or assesses the direct relationship, while the second outer (structural) model evaluates the indirect relationship, in particular, the moderating effect. Similarly, according to Hair et al. (2014), to assess structural model using PLS-SEM, the following criteria must be determined. These are 1, assessment of the strength of the paths coefficients; 2, determination of the coefficient of  $R^2$ ; 3, effect size determination; and 4, ascertaining the predictive relevance  $Q^2$ . All the procedures were complied with by this study and have been presented in the succeeding part of the structural model assessment.

### **7.3.1 Hypotheses Testing for Direct Relationship (Outer Model)**

This section of the present study deals with testing of the hypothesized direct relationship between the exogenous constructs (IVs) and the endogenous construct (DV). As demonstrated in Figures 7.3 and 7.4 below. The outer model (direct relationship bootstrapping) exclusively evaluated the direct relationship between the exogenous constructs (IVs) and the endogenous construct (DV). H<sub>1</sub>: There is significant relationship between human asset and sustainable poverty reduction; H<sub>2</sub>: There is significant relationship between social asset and sustainable poverty reduction; H<sub>3</sub>: There is significant relationship between physical asset and sustainable poverty reduction; H<sub>4</sub>: There is significant relationship between financial asset and sustainable poverty reduction; H<sub>5</sub>: There is significant relationship between natural asset and sustainable poverty reduction; H<sub>6</sub>: There is significant relationship between

livelihood strategy and sustainable poverty reduction. Figures 7.3 and 7.4 below demonstrate the evaluation of the structural model's direct relationships.

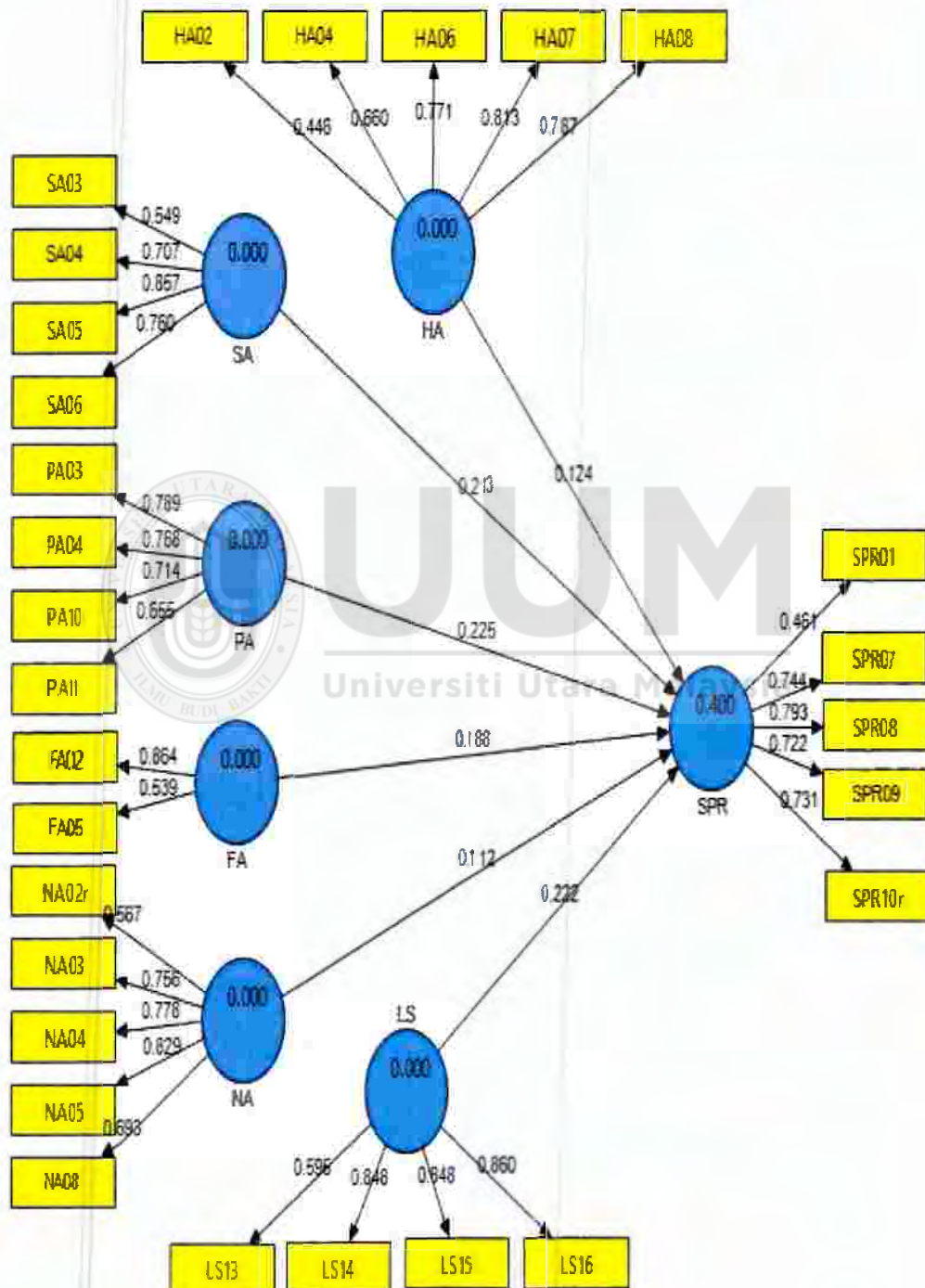
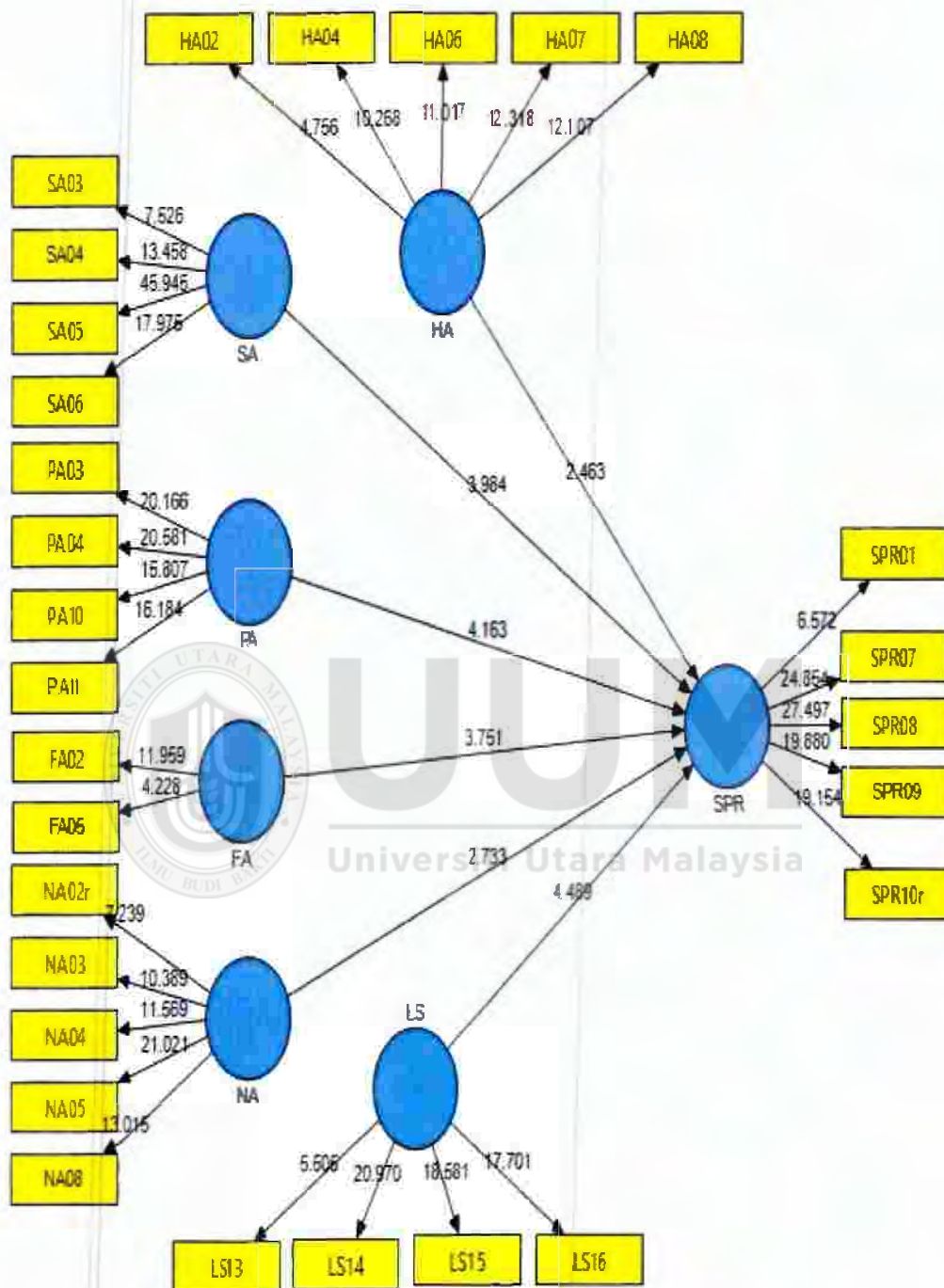


Figure 7.3 Direct Relationship (PLS Algorithm)



**Figure 7.4** Direct Relationship (PLS Bootstrapping)

Table 7.4 below shows result of the structural model of the present study, in particular, the hypothesized direct relationship between the exogenous and endogenous variables. The results were interpreted by the use of path coefficients' values ( $\beta$ ), the standard error (SE), and T-statistics. Consequently, level of significance using alpha values, and

asterisk signs were used to denote the significance level, specifically with an inscription of (3\*\*\*) representing 0.01 %; (2\*\*) representing 0.5 %; and (1\*) representing 0.10 % respectively.

Table 7. 4

*Results of Hypotheses Testing (Direct Relationship)*

Hypotheses	Relationship	Beta ( $\beta$ )	Std. Error	Tvalue	Decision
H <sub>1</sub>	HA-> SPR	0.12	0.05	2.46 **	Supported
H <sub>2</sub>	SA-> SPR	0.21	0.05	3.98***	Supported
H <sub>3</sub>	PA-> SPR	0.22	0.05	4.16***	Supported
H <sub>4</sub>	FA-> SPR	0.19	0.05	3.75***	Supported
H <sub>5</sub>	NA-> SPR	0.11	0.04	2.73***	Supported
H <sub>6</sub>	LS-> SPR	0.22	0.05	4.49***	Supported

Note:\*\*\* Sig. at 0.01 (2-Tailed), \*\*Sig.at 0.05 (2-tailed)\* Sig. at 0.10 (2-Tailed).

The above Table 7.4 presented the statistical analysis which explained and supported the assumption of H<sub>1</sub> signifying that there is significant positive relationship between access to human asset and sustainable poverty reduction, thus, ( $\beta=0.12$ );  $t=2.46$ ) proved the hypothesis H<sub>1</sub>. Similarly, the statistical analysis result about the second hypothesis H<sub>2</sub> proved that there is a significant positive relationship between access to social asset and sustainable poverty reduction in essence it denotes that access to social asset influences sustainable poverty reduction as supported by ( $\beta=0.21$ ;  $t=3.98$ ), therefore it is correct to say that H<sub>2</sub> is supported positively. Likewise, H<sub>3</sub> which hypothesized that there is a significant relationship between access to physical asset and sustainable poverty reduction has been proved in the positive term as indicated by ( $\beta=0.22$ ;  $t=4.16$ ); so also H<sub>4</sub> which predicted a significant relationship between access to financial asset and sustainable poverty reduction has been positively confirmed by the statistical analysis results as seen ( $\beta=0.19$ ;  $t=3.75$ ), thus H<sub>4</sub> is supported positively. In the same vein, H<sub>5</sub> which hypothesized strong relationship between access to natural asset and sustainable poverty reduction has been answered in the positive as the

statistical result revealed ( $\beta=0.11$ ,  $t=2.73$ ), and lastly  $H_6$  which presumed a significant relationship between adopting livelihood strategy and sustainable poverty reduction has also been supported positively as indicated by the statistical analysis ( $\beta=0.22$ ;  $t=4.49$ ). This study therefore concludes that in line with Hair et al. (2011; 2014) all the critical values (T-values) attained by this study suggested that there is significant positive relationship between the independent variables and dependent variable of this study at 5% (\*\*) for human asset and sustainable poverty reduction, and at 1% (\*\*\*) for social asset, physical asset, financial asset, natural asset, livelihood strategy respectively and sustainable poverty reduction.

In line with the above, the results revealed by the statistical analysis, it is therefore justified that, there is direct a significant positive relationship between the latent exogenous and endogenous variables (i.e., there is a strong positive relationship between the predicting and criterion variables). It sufficed to say that, in this study, empirically it has been established that there is a strong positive relationship between access to livelihood assets (human, social, physical, financial and natural), livelihood strategy and sustainable poverty reduction as predicted by this study.

In furtherance with the assessment of the structural model as suggested by (Hair *et al.*, 2014; Hair Jr., Hull, Ringle, & Sarstedt, 2016; Henseler *et al.*, 2009), determination coefficient ( $R^2$ ) was evaluated to ascertain the relevance and significance of the exogenous constructs on the endogenous construct. In summary, the coefficient of determination ( $R^2$ ) evaluates the total correlation between the exogenous and endogenous variables. It assessment is in the succeeding (immediate) part of the structural model relationship evaluation.

### 7.3.2 Determination of Coefficient ( $R^2$ )

In the evaluation of the structural model assessing the coefficient of determination ( $R^2$ ) is very fundamental as it is assumed to be the squared relationship between the actual and predictive value of the exogenous constructs (Hair *et al.*, 2016; Hair *et al.*, 2014). Level of the  $R^2$  value represents the total effect of the exogenous constructs on the latent endogenous construct as such it signifies the summary of the collective impact of the exogenous constructs on the endogenous constructs (Hair *et al.*, 2016; Hair *et al.*, 2014; Hair *et al.*, 2010). However, the level accepted for the  $R^2$  is determined by the nature of the model (simple or complex) as well as the discipline of the research, thus making threshold identification important, however rule of thumb was employed for some considerable values for the  $R^2$  (Hair *et al.*, 2014).

Accordingly, Chin (1998) suggested that an  $R^2$  value of 0.67 is to be considered as substantial; that of 0.33 moderate; while that of 0.19 to be taken as weak as far PLS-SEM. While in the same vein, Hair *et al.* (2014) posited that, an  $R^2$  value of 0.75 should be regarded as substantial, while an  $R^2$  value of 0.50 should be taken as moderate, and  $R^2$  value of 0.25 stands as weak; and the position was further corroborated by (Hair *et al.* 2011; Henseler *et al.*, 2009). However, Cohen (1988) recommended  $R^2$  values of .27; .13; .02, as substantial, moderate and weak coefficients respectively. In line with the aforementioned benchmark for the coefficient of determination ( $R^2$ ) of the endogenous construct (variable) concerning the direct relationship model of this study is presented in Table 7.5 below.



Table 7. 5

*Coefficient of Determination: R Square ( $R^2$ )*

Construct	R-Squared value ( $R^2$ )
Sustainable Poverty Reduction	0.400

Source: Simulation by the Researcher

It can be seen from the Table 7.5 above that exogenous constructs (variables) of this research/study (i.e, human asset, social asset, physical asset, financial asset, natural asset, and livelihood strategy) explained 40 percent variance for sustainable poverty reduction (SPR). It is therefore right to say that considering the suggestion by Chin (1998b), the  $R^2$  value achieved by this study is moderate, while using Cohen's (1988) submission the  $R^2$  value is substantial, thus, indicated that the exogenous constructs contributed 40 percent of the endogenous construct in terms of their direct relationship.

### 7.3.3 Effect size Assessment ( $f^2$ )

As indicated in the preceded part this sub-section deals with the relative effect of the individual exogenous construct as far its total contribution or significance which relates also to the  $R^2$  value attained in collective perspective. It has been asserted that after the evaluation of the coefficient of determination  $R^2$  (total) it is fundamental to assess the change in the value of the  $R^2$  when a particular exogenous construct is removed from the model so as to evaluate the strength, significance or impact of the individual exogenous construct on the endogenous construct, which has further been described as effect size (Hair *et al.*, 2016; Hair *et al.*, 2014). Accordingly, an effect size explains the individual effect as far the collective impact of the exogenous constructs on an endogenous latent variable in particular when the removal of an exogenous construct occasioned a change in the  $R^2$  (Chin, 1998). Chin (1998) further

suggested that effect size is articulated using Cohen's formula as described by Hair et al. (2016), Hair et al.(2014), and Chin (1998) as shown below: Effect size is;

$$f^2 = \frac{R^2 \text{ included} - R^2 \text{ excluded}}{1 - R^2 \text{ included}}$$

Therefore, the  $f^2$  value the explains the effect size of a particular exogenous construct on the exogenous construct involved, while  $R^2 \text{ Included}$  is the  $R^2$  value of the dependent variable (endogenous construct) prior to the removal of a particular predictor variable (exogenous); and  $R^2 \text{ Excluded}$  represents the rate of change in the value of  $R^2$  of the criterion variable (endogenous) when a specific predictor (exogenous) variable is removed from the model.

In consideration of the Cohen's formula as advanced by Chin (1998), this study calculated the effect size of each exogenous variable of the study using the designated thresholds for the  $f^2$  values as far large (0.35), medium (0.15), and small (0.02) effect sizes respectively. The result of the effect size calculated is presented in Table 7.6 below.

Table 7. 6

*Evaluation of Effect Size: F-Square ( $f^2$ )*

Latent Construct (Exogenous)	$R^2$ Included	$R^2$ Excluded	$f^2$	Effect Size
Human Asset	0.40	0.39	0.01	None
Social Asset	0.40	0.37	0.05	Small
Physical Asset	0.40	0.36	0.06	Small
Financial Asset	0.40	0.37	0.05	Small
Natural Asset	0.40	0.39	0.02	Small
Livelihood Strategy	0.40	0.36	0.08	Small

Source: Simulation by Researcher



The Table 7.6 above encapsulated the total impact or significance of the individual exogenous construct on the endogenous latent construct, thus it shows the effect size weight of the individual exogenous constructs of this study (i.e) social asset (0.05) small, physical asset (0.06) small, financial asset (0.05) small, natural asset (0.02) small, and livelihood strategy (0.08) all have an effect size categorized as small, while human asset (0.01) none (do not have any effect) on the endogenous construct. Therefore, it is correct to say that all the exogenous constructs of this study have relative considerable effect on the endogenous latent construct sustainable poverty reduction (SPR) except human asset that does not have any effect or impact on the exogenous construct (see Table 7.6).

#### **7.3.4 Evaluation of Predictive Relevance**

After the assessment of the effect size in the preceded sub-section, this part deals with the evaluation of the predictive relevance of the model of this research. Accordingly, to achieve that, this study utilized the Stone-Geisser's predictive relevance test by conducting blindfolding which explained the predictive worth of the model (Stone, 1974; Geisser, 1974). It has been articulated that Store-Geisser's predictive relevance test stands as an add-on or complementary method of evaluating model's goodness-of-fit contained in the partial least squares' structural equation modeling (Duarte & Raposo, 2010). This study used blindfolding to ascertain the predictive relevance of the present research model in line with the argument advanced concerning models that have reflective constructs (Sattler, Volckner, Riediger, & Ringle, 2010).

In particular, Stone-Geisesser's ( $Q^2$ ) otherwise known as the cross-validated redundancy was utilized by this study to determine the predictive relevance of this

research's model in line with (Hair *et al.*, 2013; Ringle, Sarstedt, & Straub, 2012; Chin, 2010; Stone, 1974; Geisser, 1974). It is fundamental to note that, the  $Q^2$  measures the model's fit in predicting the data of cases omitted (Hair Jr. *et al.*, 2016; Hair *et al.*, 2014; & Chin, 1998). The  $Q^2$  statistical value (s) as far predictive relevance that is greater(>) than zero (0) confirms the predictive relevance of a research model, thus the higher the positive  $Q^2$  value the more reliable the predictive relevance of a research model (Henseler *et al.*, 2009). In line with the foregone assertion, blindfolding was employed and the result is presented in Table 7.7 below.

Table 7. 7

*Predictive Relevance ( $Q^2$ )*

Construct	SSO	SSE	1-SSE/SSO
Sustainable Poverty Reduction	1615	1305.7941	0.1915

Source: PLS-SEM Output (Blindfolding)

The above Table 7.7 shows the blindfolding's cross validated redundancy ( $Q^2$ ) results of the latent endogenous construct (i.e., Sustainable poverty reduction) of this research model (see appendix F). The results indicated that the predictive relevance (cross validated redundancy  $Q^2$ ) indicated that the model of this study has predictive ability as it exceeded zero (0), thus, this indicates that there is predictive relevance in line with (Hair *et al.*, 2016; Hair *et al.*, 2014; Hayes, 2009; & Chin, 1998).

#### 7.4 Testing of Moderating Effect

The preceded (immediate) part of the chapter dealt with assessment of the direct relationship between the exogenous constructs and the endogenous latent construct as shown in Figures 7.3 and 7.4. The current section aimed at the evaluation of the interaction term, thus multiplication of the predictor variable by the interacting

variable (moderator) was conducted (see Figures 7.5 and 7.6) as recommended (Esposito Vinzi, Chin, Henseler, & Wang 2010). In this context, construct indicators' products are usually employed to show the latent interaction (Schumacker & Marcoulides, 1998). It has been argued that the results of the product terms are typically the same or greater than of group comparison method, thus product term method is the most suitable (Henseler & Fassot, 2010).

In testing the moderating effect, indicator product approach was employed with a view to ascertain the influence (moderation effect) of government intervention on the relationship between independent variables (livelihood assets), human asset (HA); social asset (SA); physical asset (PA); financial asset (FA); natural asset (NA), and livelihood strategy (LS), and the dependent variable (DV) sustainable poverty reduction (SPR). In structural model, Kenny and Judd (1984) posited that interaction term need to be created, and in doing so predictor variables' latent indicators as well as moderating variable indicators were created representing the product term otherwise known as the interaction term. Nonetheless, moderation effect is said to have happened when the interaction terms are strong and significant enough to impact or cause an effect on the endogenous construct (Hair *et al.*, 2013). Figures 7.5 and 7.6 below indicated the nature of the interaction.

Furthermore, to ascertain the effectiveness (strength) of the moderating relationship, this study adhered to Cohen's (1988) submission as far the effect size and the results were reported (see Table 7.5 and Figure 7.6) which demonstrated evaluation after product indicator method was deployed in determining the moderating effect of government intervention on the relationship between the independent and dependent

variables of this study. In line with the above assertion, the interaction effect (moderation relationship) on the indirect relationship between human asset (HA), social asset (SA), physical asset (PA), financial asset (FA), natural asset (NA), livelihood strategy (LS), and sustainable poverty reduction (SPR) was evaluated and the results presented below by Figures 7.5 and 7.6 as well as Table 7.8 below.



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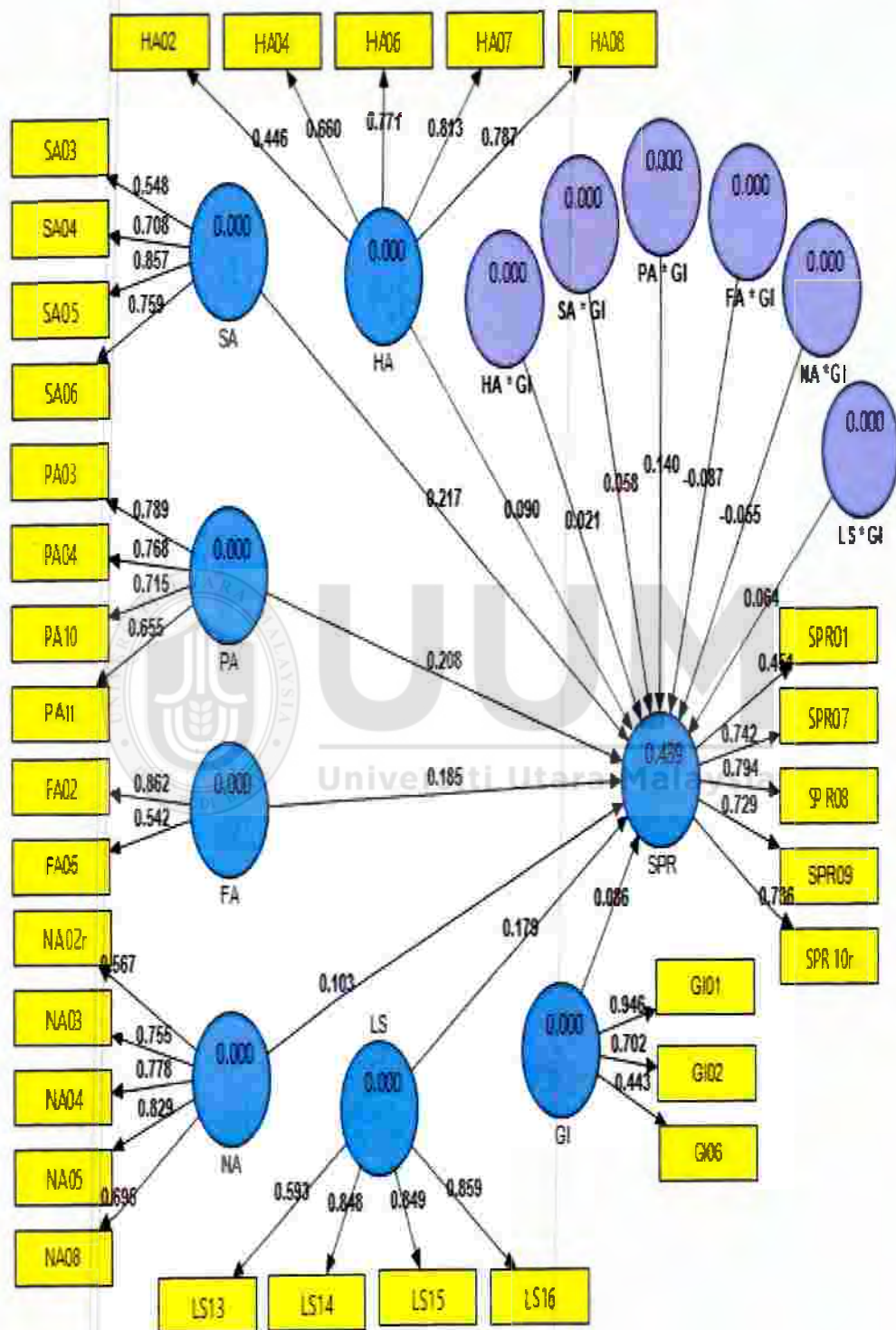
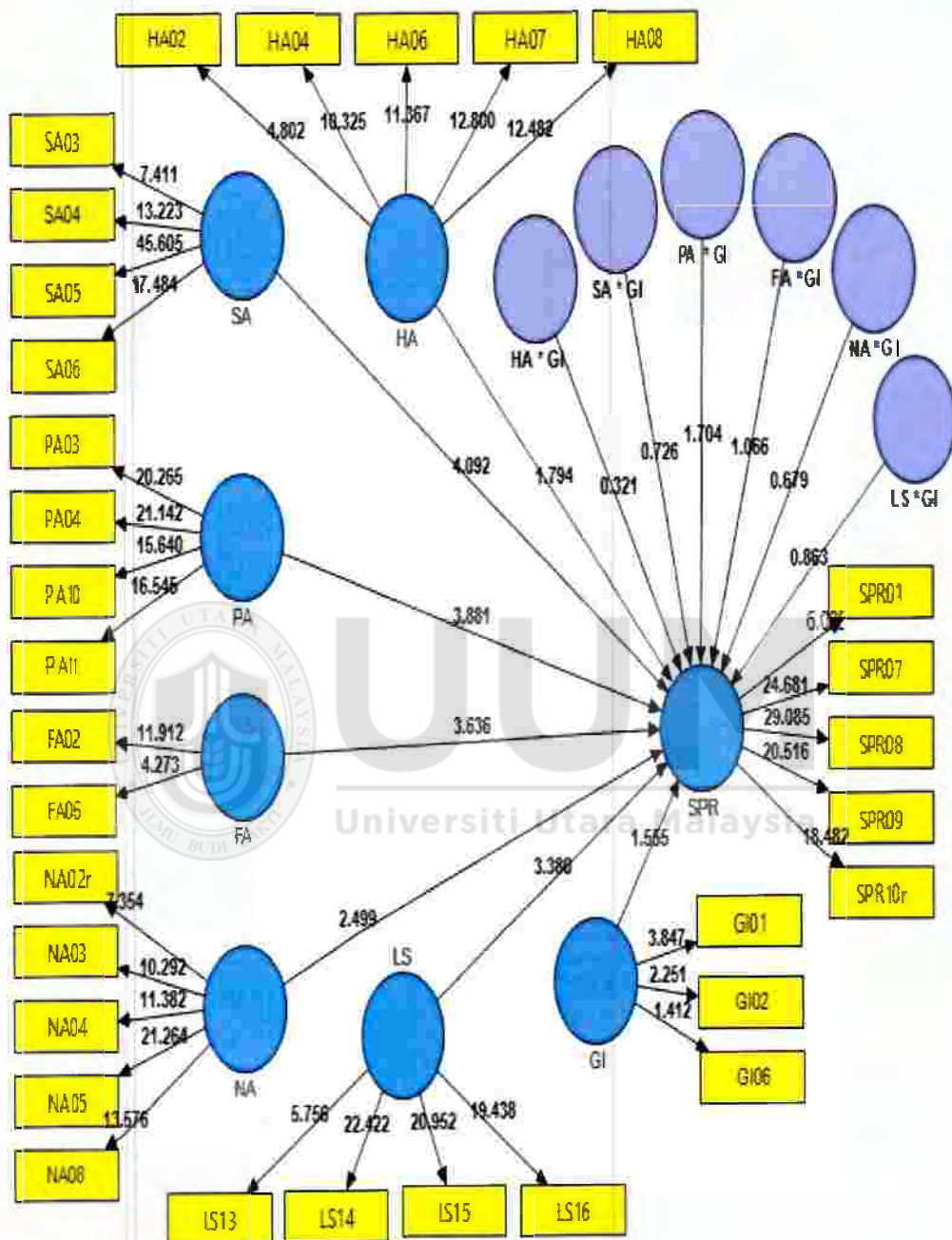


Figure 7.3 PLS-SEM Interaction Effect (Algorithm)



**Figure 7.6** PLS-SEM Interaction Effect (Bootstrapping).

Results of the hypotheses testing in Table 7.8 below has shown that government intervention has substantial (significant) moderating impact on the relation between access to physical asset and sustainable poverty reduction, while the moderator

government interaction has no moderating effect on human asset (HA), social asset (SA), financial asset (FA), natural asset (NA), and livelihood strategy (LS), refer to (Table 7.8 below).

Similarly, Figure 7.7 below demonstrated that interaction term of physical asset and government intervention (PA\*GI) to sustainable poverty reduction is strong and or significant statistically ( $\beta=0.14$ ;  $t=1.70$ ). It is therefore based on this that, the researcher concludes that  $H_9$  is supported. However, other hypotheses as far the moderating effect of government intervention were not statistically supported as indicated in Table 7.8 below.

Table 7. 8  
*Testing of Moderation Hypotheses*

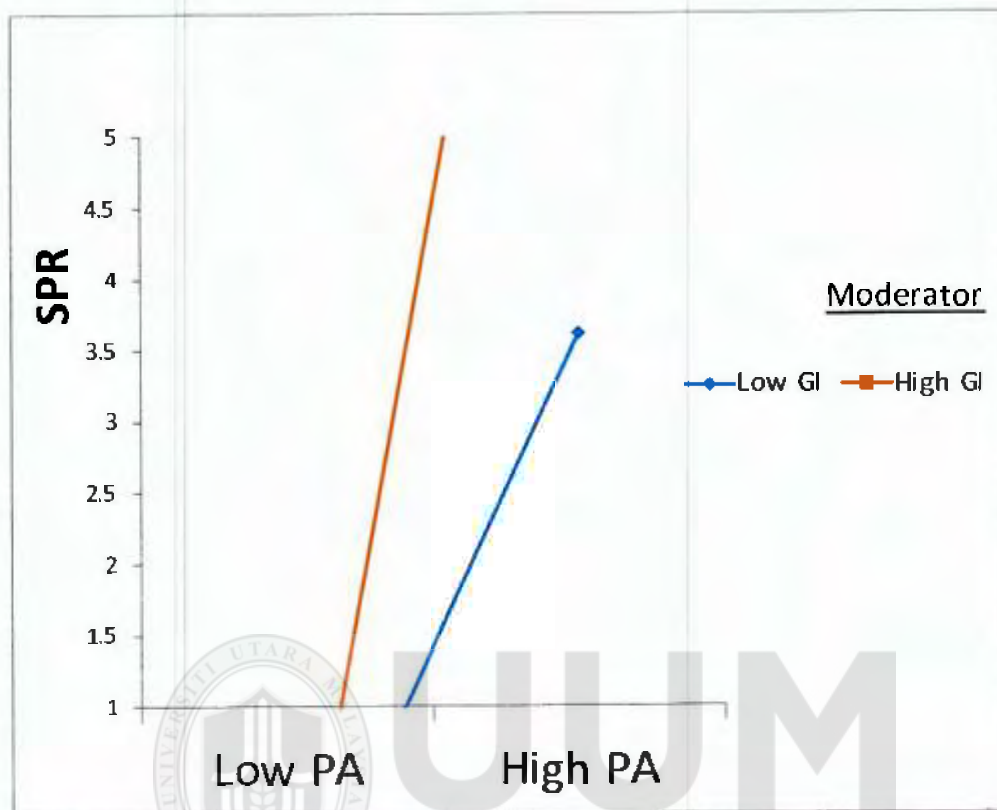
Hypotheses	Relationship	Beta	Std. Error	T-stats.	Decision
H7	HA * GI $\rightarrow$ SPR	0.02	0.07	0.32	Not Supported
H8	SA * GI $\rightarrow$ SPR	0.06	0.08	0.73	Not Supported
H9	PA * GI $\rightarrow$ SPR	0.14	0.08	1.70*	Supported
H10	FA * GI $\rightarrow$ SPR	-0.09	0.08	1.07	Not Supported
H11	NA * GI $\rightarrow$ SPR	-0.05	0.08	0.67	Not Supported
H12	LS * GI $\rightarrow$ SPR	0.06	0.07	0.86	Not Supported

Source: Simulation by the Researcher

Note:\*\*\* Sig. at 0.01 (2-Tailed), \*\*Sig.at 0.05 (2-tailed),\* Sig. at 0.10 (2-Tailed).

In line with the statistical figures and values from the path coefficients presented above, a graphical presentation of the interaction effect (PA\*GI $\rightarrow$ SPR) that is the moderating effect of government intervention concerning the relationship between access to physical asset and sustainable poverty reduction was made (see Figure 7.7), using the techniques as suggested (Marcus, Schuler, Quell, & Hümpfner, 2002). Thus the graphical plot of the moderating impact is presented in Figure 7.7 below.





GI strengthens the positive relationship between PA and SPR.

**Figure 7.7** Effect of government intervention on access to Physical asset and Sustainable poverty reduction

#### 7.4.1 Assessment of the might (strength) of the Interaction Effect

To evaluate the might of the interaction's effect this study utilized the Cohen's (1988) method of effect size calculation with a view to validating the interaction effect of government intervention on the correlation/relationship between access to physical asset and sustainable poverty reduction. To achieve that, this study followed the procedure by assessing the difference in terms of the ( $R^2$ ) values of the two different



models, that is the model involving interaction effect and that of the full model without the presence of moderation effect (Henseler & Fassott, 2010). To calculate the influence of the moderator variable (GI) on the endogenous variable (SPR), this study used the formula suggested (Henseler, & Fassot, 2010; Chin, 1998). The formula is expressed below, thus:

$$\text{Effect size: } f^2 = \frac{R^2_{\text{model with moderator}} - R^2_{\text{model without model}}}{1 - R^2_{\text{model with moderator}}}$$

According to Henseler and Fassot (2010), and Cohen (1988) effect size ( $f^2$ ) value of moderating effect of 0.35 is seen as large (substantial), 0.15 as reasonable (moderate), and 0.02 fragile (weak) correspondingly. Notwithstanding, Chin, Marcolin, and Newsted (2003) cautioned that effect size of small nature does invalidate the significance of a moderating effect. (Chin *et al.*, 2003: p. 211), further highlighted that “even a small interaction effect can be meaningful under extreme moderating conditions, if the resulting beta changes are meaningful, then it is important to take these conditions into account“. Table 7.9 illustrates the result of the efficacy/impact value of the government intervention as the moderator.

Table 7. 9

*Interaction's Effect size*

Criterion Variable	R <sup>2</sup> Included	R <sup>2</sup> Excluded	$f^2$	Effect size
Sustainable poverty reduction	0.439	0.4	0.0695	Small

Source: Cohen (1988)

In line with best practice (rule of thumb) suggested by Henseler and Fassot (2010), and Cohen (1988) as far weighing the impact of the interaction (moderation), the Table 7.9 above shows that the endogenous variable's effect size stood within the small category impact, thus depicting that the interaction effect of GI was small (0.4).

#### 7.4.2 Evaluation of the Interaction model's Predictive Relevance

As examined in the direct relationship part of this study after the interaction effect the researcher employed Stone-Geisser (1974) technique of ascertaining predictive ability of model. In specific term blindfolding was used and the cross-validated redundancy ( $Q^2$ ) of the model was measured and the overall relevance of the model was explored in line with (Hair *et al.*, 2013; Ringle, Sarstedt, & Straub, 2012; Chin, 2010; Stone, 1974; & Geisser, 1974). Therefore, the result of the statistical exploration of the model's (interaction full model) fitness in terms of predictability has been shown in Table 7.10 below.

Table 7. 10

*Predictive Relevance (With Interaction)*

Dependent Variable	SSO	SSE	1-SSE/SSO
Sustainable poverty reduction	1615	1283.2219	0.2054

Source: Simulation by the Researcher

Considering the value above (0.2054) in Table 7.10 it is in order to say that, based on the proposition of Henseler *et al.*, (2009) the model (interaction) of this study has higher predictive significance as its  $Q^2$  is by far greater the threshold of zero as opined (see appendix G) for model predictive relevance diagram.

#### 7.4.3 Recapitulation of the study finding

At this juncture the researcher, after presentation of the analyzed results of both the direct (main) relationship between the exogenous constructs and the endogenous construct of this study, and interaction impact (moderation) in the foregone subsections of the chapter, deemed it necessary to sum up the research's findings as indicated in Table 7.11 below.

Table 7. 11

*Summary of findings: Direct Relationship and Interaction Effect*

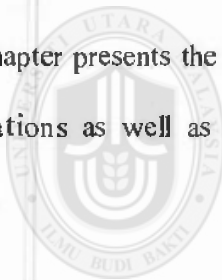
Hypotheses	Declaration/Statement	Outcome/Finding
H <sub>1</sub>	*There is significant relationship between access to human asset and sustainable poverty reduction.	Supported
H <sub>2</sub>	*There is significant relationship between access to social asset and sustainable poverty reduction	Supported
H <sub>3</sub>	*There is significant relationship between access to physical asset and sustainable poverty reduction	Supported
H <sub>4</sub>	*There is significant relationship between access to financial asset and sustainable poverty reduction	Supported
H <sub>5</sub>	*There is significant relationship between access to natural asset and sustainable poverty reduction	Supported
H <sub>6</sub>	*There is significant relationship between livelihood strategy and sustainable poverty reduction	Supported
H <sub>7</sub>	*Government intervention has moderating effect on the relationship between access to human asset and sustainable poverty reduction	Not supported
H <sub>8</sub>	*Government intervention has moderating effect on the relationship between access to social asset and sustainable poverty reduction	Not supported
H <sub>9</sub>	*Government intervention has moderating effect on the relationship between access to physical asset and sustainable poverty reduction	Supported
H <sub>10</sub>	*Government intervention has moderating effect on the relationship between access to financial asset and sustainable poverty reduction	Not supported
H <sub>11</sub>	*Government intervention has moderating effect on the relationship between access to natural asset and sustainable poverty reduction	Not supported
H <sub>12</sub>	*Government intervention has moderating effect on the relationship between livelihood strategy and sustainable poverty reduction	Not supported

Source: Simulation by the Researcher

## 7.5 Chapter Summary

This chapter considered, extensively, the different statistical analyses of the quantitative survey data gathered from across the 12 local governments of Sokoto State by the use of structured Questionnaire. Accordingly, PLS-SEM (Smart PLS 2.0) was employed after the preliminary analysis and both the measurement and the structural models were established, evaluated, analyzed and reported, which resulted in the testing of the hypothesized relationships of direct relationship and interaction effect as well as other necessary measures like coefficient of determination, effect size and predictive relevance.

The next chapter presents the discourse on the study's findings, research implications, study limitations as well as recommendations for further research and the study's conclusion.



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## **CHAPTER EIGHT**

### **DISCUSSION AND STUDY IMPLICATIONS**

#### **8.1 Introduction**

In the preceding chapter, the emphasis was on presentation of analyses and research's findings with the view to provide support for the hypothesized relationships using the empirical data gathered as evidence. Putting it another way, the present chapter reviews the findings of the study inconsistency with the analyses and presented results in the prior chapter (chapter 7). In the second part discussion about the research's findings was carried out by the researcher in conformity with both the research questions and objectives of the study premised/based on the guiding theory/approach and related studies. Accordingly, the next discourse by the researcher was on the theoretical, practical, methodological, and empirical implications of the current research to the literature body, government, human kind and the environment of the study. The next section deals with the limitations of the study as discovered, thus recommendations in relation to the direction for future study were advanced. Lastly, the conclusion was drawn based on the findings of this study.

#### **8.2 Review of Findings of the Study**

The present study looked at the issue of incidence of poverty in Nigeria, and particularly Sokoto State which has been categorized as one of the poorest states in Nigeria, thus depicting that there is a higher incidence of poverty in the state (OPHI, 2015; NBS, 2015; NBS, 2012). Although attempts were made to address poverty, not only Sokoto State, but generally in Nigeria, however Gyong (2012) opined that all the

efforts failed to address the scourge of poverty in Nigeria. The menace of poverty in Sokoto State has been tagged as multidimensional OPHI (2015) which ranges from higher illiteracy level, poor sanitation, energy poverty, poor health institutions, food poverty and lack of good drinking water among others. It was on this premise that this study also aspired and evaluated the moderating role of government intervention concerning the relationship between access to livelihood assets, and livelihood strategy on one hand, and sustainable poverty reduction in Sokoto State on the other hand. To accomplish that, some 323 valid responses were collected from sampled rural household from 12 local governments in Sokoto State. Upon completion of the data gathering, this study tested six (6) direct relationships in form of hypotheses and six (6) moderating relationships in form of hypotheses based on the research questions and research objectives exclusively (refer to chapter one 1.3 & 1.4).

Precisely, the results of the statistical analysis generated from PLS-SEM path modeling espoused (supported) H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub>, H<sub>4</sub> and H<sub>5</sub> developed from research question 1 and objective 1 on one hand, and also H<sub>6</sub> founded on research question 2 and research objective 2, thus all the six (6) direct relationship hypotheses were supported by the empirical data of this study. On the interaction (moderation relationship) only H<sub>9</sub> based upon research question 3 and objective 3 was found to be statistically significant and therefore was supported by the empirical data of this study, while H<sub>7</sub>, H<sub>8</sub>, H<sub>10</sub>, H<sub>11</sub>, and H<sub>12</sub> derived from the same research question 3 and objective 3 were not found by the PLS-SEM path modeling to be statistically significant as such were not confirmed (not supported) by the empirical data of this study.

### **8.3 Recapitulation of the Socio-Economic Characteristics of the Respondents**

Basically, majority of the inhabitants of the study area (Sokoto State) are farmers of both subsistence and small scale commercial farming that produce maize, millet, and perishable farm produce like onions, tomatoes, pepper, and garlic e.t.c (Anyebe, 2014). It should be noted that empirical data collected by the present study concurred with the finding of Anyebe (2014) as the data showed that 94.4 percent of the respondents actively engage in agricultural activities for the production of food and cash crops for commercial purpose. Notwithstanding, there are other socio-economic activities engaged by the inhabitants of the study which include petty trading, dyeing, blacksmithing, road vendoring of goods and services (AbdulSalam & Tukur, 2014). Similarly, the empirical data collected by the present study showed that main sources of livelihoods or income for the respondents include civil service 33.4 percent, farming 94.4 percent, and fishing 2.8 percent. Furthermore, on the part time source of income, empirical data revealed that 12.1 percent of the respondents partake in manual labor, hunting 4.3 percent, and petty trading 26.6 percent.

Accordingly, on the income of the respondents some 227 respondents representing 85% earn main income of between ₦1000 (RM 13.59) to ₦100,000 (RM 1,359) with an average main income of ₦17,967 per month (see Table 6.23). Similarly, 147 respondents representing 45.5 percent earn between ₦1000 (RM 13.59) and ₦60,000 (RM 815.40) per month as part-time income with an average income of ₦11,955 (see Table 6.24), while only 42 respondents standing for 12.9 percent earn from other sources of income between ₦1000 (RM 15.59) to ₦50,000 (RM 679.50) as extra income per month (see Table 6.25). Overall, 277 respondents (85.8 percent) indicated their sources of income per month with an average monthly income of ₦22,779.

However, it should be noted that amongst the respondents' household size varies with some household heads having between one to four wives with large number of dependents (children and members of extended family) which further explains whether the overall income is enough to cater for the households or not as averagely empirical data showed that there is an average of one (1) wife and ten (10) dependents amongst the respondents (see Tables 6.7 & 6.8).

Consequently, the income of the respondents as shown by the empirical data is usually spent on consumption and some essential services. Specifically, the 323 respondents of the study indicated that part of their income was being spent on food and drinks which range between ₦1 000 (RM 15.39) and ₦41,000 (RM 557.19) with an average expenditure of ₦18,078 per month on food and drinks (see Table 6.28). Similarly, only 245 respondents (75.9 percent) indicated that part of their income was being expended on health and medicine which range between ₦1000 (RM 15.39) and ₦30,000 (RM 407.70) with an average expenditure of ₦5,386 per month on health and medicine (see Table 6.29). However, only 56 respondents (17.3%) indicated that part of their income was being spent on utility bills with the expenditure ranging between ₦1 000 (RM 15.39) to ₦25,000 (RM 339.75) with an average expenditure of ₦5,535 (see Table 6.30). Likewise, 261 (80.8 percent) respondents indicated that part of their income was being spent on clothing members of their households with expenditure ranging from ₦1 000 (RM 15.39) and ₦41,000 (RM 557.19) with an average expenditure of ₦1 8,888 per annum (see Table 6.31), while 227 respondents (70.3 percent) asserted that part of their income was being spent on education of their household members ranging from ₦1000 (RM 15.39) to ₦15,000 (RM 149.49) with an average spending of ₦5,033 per month (see Table 6.32). Related to aforementioned only 93 respondents (28.8 percent)



indicated that part of their income goes to entertainment with an expenditure ranging from ₦1000 (RM 15.39) to ₦15,000 (RM 149.49) per month with an average spending of ₦5,080.

In addition to the above discussion, the nature and type of livelihoods activities or coping mechanisms mostly employed by the respondents to address the challenges of sustainable livelihoods and vulnerability to poverty largely range between subsistence farming, borrowing food from individuals, relying on less expensive food, to purchasing food on credit, and reducing the number of meals per day. Although the empirical data revealed a series of other livelihood activities the aforementioned mechanisms were more devised. The empirical data revealed that 270 respondents (83.7 percent) of the study engage in subsistence farming, and another 240 respondents (74.3 percent) depend on less expensive food for consumptions while 234 respondents (72.8 percent) resort to reducing number of meals the households consume per day, and another 174 respondents (53.9 percent) indicated that they use to purchase food on credit to cope with challenges about their livelihoods and feed their households, whereas some 134 respondents (41.5 percent) indicated that they usually borrow food from individuals to feed their families (see Table 6.43). Notwithstanding, there are other livelihood activities incorporated by this study, however the above mentioned are the most patronized livelihood activities embraced by the respondents of the study which has clearly shown that livelihood strategy has not been fully exploited to the fullest in the study, therefore it is not surprising that OPHI (2015) and NBS (2012) had classified Sokoto State as having high incidence of poverty and proportion of the poor in Nigeria.

Accordingly, other factor that shapes the socio-economic well-being and livelihoods of the respondents has to do with cultural inclination. For instance, the empirical data revealed that among the respondents 201 (62.3 percent) have no touch of the western education signifying that they do not have any certificate that will make them employable either by government or private enterprises as indicated by the demographic information of the respondents, which results from widely held belief in the core rural areas that, western education is alien and creation of the white man with nor Islamic obligation (see Table 6.5).

Similarly, another cultural influence on livelihoods in the study area relates to the domination of the men folks (gender) in the structure of the households that only men partake in livelihood activities to cater for the households, while women are domesticated and assigned the role of raising family, and cooking of food as tradition in the area forbids women to mingle with men and have role in heading the household. This is evidenced in the empirical data from the study area where out of the 323 valid responses used by the study only two (2) women incidently surfaced in the valid samples, representing .6 percent (see Table 6.5). The point here is if women are allowed by tradition to partake in livelihood activities, and shared household headship is practiced, the livelihoods of the households would be more secure, and the households would be more resilient to face the daunting challenges of insecure livelihoods and vulnerability to poverty. Closely related to that is the culture of extended family system where in a particular household you see a husband, wife, their children and other extended family members who altogether rely on one person to cater for their needs of food and other essential services, therefore, if the livelihood activities are not effective the household would eventually become vulnerable and insecure in

terms of livelihood outcomes (see Table 6.8) for household size structure. To sum up, the above discourse recapitulated findings of the study visa-a-vis the socio-economic features of the respondents in the study area. The next part deals with proper discussion on the research findings.

## **8.4 Discussion**

This part of the present study's discourse focuses on the findings of the study in consistency with sustainable livelihood approach which guides this study. The entire discourses are sequential in line with the flow of the research questions and objectives of the present study.

### **8.4.1 The impact of access to livelihood assets on sustainable poverty reduction**

The first question posed by the present study is does access to livelihood assets impacts on sustainable poverty reduction? In consistency with the 1<sup>st</sup> research question, the study's 1<sup>st</sup> objective was set to examine the impact of access to livelihood assets on sustainable poverty reduction. It is worthy of note that according to DFID (2000), and Ellis (2000) livelihood assets include human asset, social asset, financial asset, physical asset and natural asset.

#### **8.4.1.1 Access to Human Asset and Sustainable Poverty Reduction**

Human asset entails a combination of knowledge, skills, good health and employability which an individual or household use to generate and enhance their livelihood opportunities with a view to stay out of poverty trap (Weiss, 2015). Krantz (2001) opines that human asset implies the knowledge (education), capability (physical and mental ability) household or individual employ to meet end needs in

form of livelihood strategy. It was asserted that access to human asset and investment in it enables individuals and households to enhance their economic well-being, thus human asset ensures positive livelihood outcomes/earnings (Andres, & Chavez, 2015; Sen, 1997; Schultz, 1961). In line with the aforementioned meaning of human asset, this study drew hypothesis 1 ( $H_1$ ); that there is a significant relationship between access to human asset and sustainable poverty reduction.

To test the hypothesis ( $H_1$ ) PLS-SEM was utilized and the results generated indicated that there is a significant positive relationship between access to human and sustainable poverty reduction, thus  $H_1$  was supported. The path modeling result shows ( $\beta=0.12$ ,  $SE=0.05$ ,  $t= 2.46$ ). This statistical support for  $H_1$  confirms that individual or household that accessed and utilized human asset could have their poverty menace reduced on a sustainable basis. This is in line with the approach/theory guiding this study (The sustainable livelihood approach) advanced by (WCED, 1987; Ashley & Carney, 1999; Chambers, & Conway; 1992, Krantz, 2001). The result supporting/confirming  $H_1$ , that is the efficacy of access to human asset on sustainable poverty reduction did not come as a surprise as there are empirical studies that confirmed the assertion of this study, although in some contexts, which justified the conducting of the present study in the present context of the study as most of the empirical studies were conducted elsewhere and not in the context of the present study. Similarly, the proved significant positive relationship between access to human asset and sustainable poverty reduction implies that education, experience, skills as well as physical and material health do have stake in livelihoods of individual or households, thus play a significant role in fighting poverty. These studies include Kamaruddin and Baharuddin, (2015), Seng (2015), Kumo (2015), Lim and Mansur (2015), Yusoff, Kazi, Khan, and Siddique (2016),

Islam, Abdullah, Viswanatham, and Yew (2006), therefore the result of this study concerning the importance of access to human asset on sustainable poverty reduction is inconsistency with the empirical studies aforementioned.

However, in reality of the empirical survey conducted by this study human asset is lacking in relation to educational attainment as 62.2 percent do not have any qualification, while 9.6 percent, 13.3 percent, 13 percent and 3 percent are for primary, secondary, intermediary and tertiary certificate respectively. Also on employability, only 33.4 percent are employed by the government while majority 63.8 percent are peasant farmers, whereas in the area of skills and training only 9.0 percent attended one training or the other and 91.0 percent do not have any skills or vocational training (see Tables 6.5 and 6.11). Overall the respondents for the study averagely had chosen disagree signifying that they were more reluctant on the questions as they do not have access to basic elements of human asset as suggested by descriptive statistics of the latent construct with a mean of 3.09 and standard deviation of .67 (see Tables 6.38 & 6.46), thus this has contributed to the poverty conundrum in Sokoto State.

Therefore, in consideration of the findings of the previous empirical studies, it is in order to say that the result of the  $H_1$  testing of this study is on track, and its statement is valid, that access to human asset enhances, positively, sustainable poverty reduction. Therefore, if human asset becomes accessible to households in Sokoto State there is possibility of reducing poverty in Sokoto State on sustained basis.

#### **8.4.1.2 Access to Social Asset and Sustainable Poverty Reduction**

The concept of social asset denotes social resources that avail life time opportunities to individuals and households in such ways as interrelations that bind individuals or households, provide social relations bridge between people as well as link them within and outside their environments which in the final analysis could afford them the social connections and socio-political benefits which in turn affect their livelihoods outcomes (DFID, 2001). Social asset was first used by Lowry (1977), and subsequently, Bourdieu (1986), Coleman (1988; 1990), and Putman (1993), although Banfield (1958) mentioned about social asset, its functions, and potentials. It was posited that access to social asset is a group property that links people, provide common benefits, mutual cooperation, and enhances social relations and networks among group members, thus it has the potency of unlocking new opportunities, support economic potentials and generally provide support towards the actualization of livelihood earnings (Adler & Kwon; 2000; Narayan, 1999; Portes, 1998; Grootaert, 1997; Coleman, 1990).

Accordingly, considering the meaning given above about social asset and its link to livelihoods this study in line with research question 1 and research objective 1 and its hypothesized relationship with sustainable poverty reduction thus H<sub>2</sub> stated that: There is significant relationship between access to social asset and sustainable poverty reduction. To confirm the assertion (hypothesis) PLS-SEM statistical package was employed and the result of the scientific analysis revealed that there is significant positive relationship between access to social asset and sustainable poverty reduction as proved by ( $\beta=0.21$ ,  $SE=0.05$ ,  $t=3.38$ ). This statistical support of H<sub>2</sub> confirms that individual or household that accessed and utilized social asset could have their poverty

menace reduced on sustained basis. This is in line with the approach/theory guiding this study (The sustainable livelihood approach) advanced by (WCED, 1987; Ashley & Carney, 1999; Chambers, & Conway; 1992, Krantz, 2001).

The positive confirmation of the H<sub>2</sub> of this study has not surprised the researcher because some empirical studies Alfonso *et al.* (2015), Lim & Mansur (2015), Shchu and Abubakar (2015) suggested that, access to social asset has the potentials for enhancing livelihoods, thus helps in combating the menace of poverty, and that continuous unfettered access to community-based organization, membership of association, social network and political participation could enrich the individual or households, and can therefore, promote socio-economic, political and cultural empowerment of the people, which would aid in poverty walk-out. Finding of this research H<sub>2</sub> concerning the impact of access to social asset on sustainable poverty reduction coincided with other empirical studies (Mawajje & Holden, 2014; Gounder, 2013; Islam & Yew, 2013; Arun *et al.*, 2013; Dzanja *et al.*, 2013).

However, fact from the field survey suggested that respondents averagely do not have access to social asset as the descriptive statistics of the latent constructs indicated a mean of 1.93 and standard deviation of .82 signifying that respondents averagely had chosen strongly disagree (see Tables 6.39 & 6.46). This entails that respondents disagree with the questions raised by the instruments or measures with regards to access to social asset thus suggesting that social asset is lacking in the study area, in particular, they do not have access to social networks, have no status in the society, no link to political authority and political parties, do not belong to community based associations and cooperative society which largely could have opened the doors of

opportunities and better their livelihoods while at the same time enhance their ability to fight and stay away from poverty. Therefore, for poverty to be reduced in Sokoto State sustainably, social asset need to be accessed by households so as to improve the livelihoods of the people in the study area. Taking into considering the array of empirical studies above that proved the efficacy of access to social asset towards poverty reduction, it is therefore not surprising that, the result from the empirical data of this study confirmed that access to social asset and sustainable poverty reduction are positively related, therefore when social asset is accessible poverty reduction would be achieved.

#### **8.4.1.3 Access to Physical Asset and Sustainable Poverty Reduction**

Physical asset means the physical productive resources or elements that are vital to individuals or households and help in the livelihoods assurance. These resources of physical asset revolve around facilities and infrastructures that provide enabling and thriving environment for livelihood activities to flourish (Kataria *et al.*, 2012).

Similarly, DFID (1999) opined that physical asset composes of better road networks and affordable means of transportation, electricity, good housing, good drinking water, health facilities, market, affordable and clean energy sources, and telecommunication. It has been asserted that access to these set of physical resources have the potency of enhancing livelihoods of individuals and households, for instance, electricity supply which helps in the operation of business enterprises, access to market which promotes trade and investment, clean water which ensure healthy living as well as good road network which allows, freely, the movement of goods and services which could all enhance livelihoods opportunities of individual and households and in turn help in



curtailing the menace of poverty (Kataria *et al.*, 2012; Scoone, 1998; Chambers & Conway, 1991). In line with the above meaning of physical asset posited, and its linkage with livelihood outcomes and poverty reduction, this study hypothesized a relationship, drawing from the research question 1 and research objective 1, and therefore suggested that: There is significant relationship between access to physical asset and sustainable poverty reduction H<sub>3</sub>.

Accordingly, in order to confirm or reject the hypothesis, the empirical data from the context of the present study were analyzed using the Smart-PLS 2 and the results of the statistical analysis revealed that there is significant positive relationship between access to physical asset and sustainable poverty reduction. The result indicated ( $\beta=0.22$ ,  $SE=0.05$ ,  $t=4.16$ ), thus confirming the projection of this study about the relationship between the physical asset and sustainable poverty reduction in positive term. This finding has answered part of research question 1 and some part of research objective 1 of this study. This statistical support of H<sub>3</sub> confirms that individual or household that accessed and utilized physical asset would have their poverty menace reduced on sustained basis. This is in line with the approach/theory guiding this study (The sustainable livelihood approach) advanced by (WCED, 1987; Ashley & Carney, 1999; Chambers, & Conway, 1992, Krantz, 2001).

The positive confirmation of H<sub>3</sub> on the significant positive relationship between access to physical asset and sustainable poverty reduction by the statistical result from PLS-SEM path modeling has not surprised the researcher as there are other related empirical studies that were conducted in some contexts that confirmed the positive impact of access to physical asset on poverty reduction (Lim, & Mansur, 2015, Alfonso *et al.*,

2015; Mendex-Lemus, & Vieyra, 2014; Arun *et al.*, 2013; Kamaruddin & Baharuddin, 2015; Kamaruddin & Samsuddin, 2014, Nasif Ahsan, 2014; Ahmed *et al.*, 2010). The cited empirical studies were conducted in another context other than the context of the present study, which has indicated the justification to further carry out similar research in the context of this study.

Notwithstanding, empirical data collected from the study area revealed that there is lack of access to basic indicators of physical asset for instance on electricity as Table 6.14 indicated that 69.7 percent of the respondents do not have access to electricity, while another 83.0 percent do not have access to portable (pipe borne) drinking water (see Tables 6.15 and refer to Appendix C) to have a glimpse of the major source of water. In general term physical asset is lacking in the study going by the result of the descriptive statistics of the latent construct in relation to access to physical asset as the result showed a mean value of 2.23 and standard deviation of .65 (see Tables 6.46) which submitted that averagely the respondents ticked disagree as far the questions or measures of access to physical asset, therefore, this study states that there is lack of access to physical asset in Sokoto State and that for poverty to be sustainably reduced people in the Nigeria and Sokoto State must have continuous access to physical asset for their poverty status to change.

Specifically, all the empirical studies cited confirmed the influence of access to physical asset on poverty reduction, in essence, access to electricity, good drinking water, access to market, medical facility, access to go road, school, internet services, and telecommunication. To sum up, accessibility to the above elements of physical asset enhance livelihood earnings, well-being, and poverty reduction, therefore the

assertion of H<sub>3</sub> of the present study has been affirmed, that access to physical asset enhances and leads to sustainable poverty reduction.

#### **8.4.1.4 Access to Financial Asset and Sustainable Poverty Reduction**

Financial asset entails economic resources that individuals or households need to access and utilize to ensure their livelihood sustenance. It signifies cash flow, stocks and other disposable tangible assets that can be liquidated into cash and can be used for livelihoods' enhancement, and can also be used to secure other livelihood assets (DFID, 1999). Financial asset basically comprises of ..., "accessible stocks (cash, bank deposits), and regular flows of money (labor income, transfers, salary, pension, and remittance) which are interconnected" (Bajwa, 2015:9). Therefore, based on the meaning of financial asset and its presumed relationship with livelihoods, and in accordance with the research question 1 and research objective 1 of the present study H<sub>4</sub> was formulated, therefore H<sub>4</sub> suggested that: There is significant relationship between access to financial asset and sustainable poverty reduction.

Consequently, to ascertain the validity or otherwise of the hypothesized relationship this study utilized PLS-SEM path modeling to evaluate the efficacy of the relationship and the result of the path modeling statistical analysis shows ( $\beta=0.19$ ,  $SE=0.05$ ,  $t=3.75$ ) which signified that the projection of this study was on track as the result confirms the existence of a significant positive relationship between access to financial asset and sustainable poverty reduction. In essence, H<sub>4</sub> has been proved by the statistical result and the assumption of this study, therefore, is valid, and is in line with the tenets of the guiding approach, the sustainable livelihood approach WCED (1987),

Ashley and Carney (1999), Chambers and Conway (1992) chosen by this study as the framework for analysis.

Consequently, the positive support for H<sub>4</sub> by the statistical result is not surprising as some empirical studies conducted in other context confirmed the existence of positive relation between access to financial asset and poverty reduction which include (Lim, & Mansur, 2015; Kamaruddin & Baharuddin, 2015; Seng, 2015; Samsudin & Kamaruddin, 2013; Akudugu, 2011). Conversely, the empirical evidence from the data collected in the study area (Sokoto State) revealed that there are issues with respect to financial asset for instance in the demographic information part it was shown that only 2.5 percent of the total respondents usually save money signifying that majority 97.5 percent do not save money because they do not have enough income to meet household demands and savings (see Table 6.20), while with regards to access to loan 98.8 percent do not have access to loan from either commercial banks nor microcredit from government microfinance institution or private microfinance institution which makes investment to create jobs and wealth impossible (see Table 6.22).

Summarily, the descriptive statistics of the latent constructs caps it all as it revealed a mean value of 1.56 and a standard deviation of .39 (see Table 6.46) submitting that averagely respondents of the study had chosen “Never“ meaning that they do not have or do activities that generate income (petty business/trading, or liquid assets like livestock, jewelleries, and household assets that can be sold to address numerous needs of their households. Therefore, this study concludes that lack of access to financial asset in study area (see Table 6.41) contributes to the poverty menace and that for sustainable poverty reduction to take place in Sokoto State there has to be an

unhindered access to financial asset by the people of Sokoto State so as to secure their livelihoods and by implication combat their poverty status.

Therefore, taking into consideration the statistical significance of the hypothesized relationship  $H_4$ , it is on point to say that access to stocks, cash flow, tangible assets, transfers and remittances play significant role in reducing poverty and vulnerability to it, therefore continuous accessibility to financial asset in study area has the potency of reducing poverty sustainably.

#### **8.4.1.5 Access to Natural Asset and Sustainable Poverty Reduction**

Natural asset is conceived as resources that have natural base which include land for agricultural purposes, water for fishing and irrigational purposes, and other biological resources like grasses, shrubs as well as other non-biological (soil, clay, and solid minerals) resources that could be transformed into means of livelihoods (Ellis, 2000).

Natural asset represents biological resources both living and non-living of the larger ecosystem, therefore natural asset provides life-time opportunities to individuals and households by way of harnessing and proper utilization of the resources which could turn things for good and enhances the livelihood earnings of those people that harnessed and utilized it (Guerry *et al.*, 2015). Twyman and Slater (2000) noted that natural asset comprises such elements such as water for fishing, agro-dams and canals, land for cultivation, commercial gardens; economic trees for commercial purposes and non-biological element like rock for sale, and other abundant mineral resources which households harness and utilize for economic gains and purpose, which in turn enhances their livelihood outcomes.

Deriving from the above connotations of natural asset and its relation with livelihoods sustenance and security, as well as the intention of the research question 1 and the research objective 1 of this study, this study hypothesized that: There is significant relationship between access to natural asset and sustainable poverty reduction H<sub>5</sub>. Similarly, in line with the research question 1 and research objective 1, this study collected empirical data in an effort to pursue vigorously the goals of the research question 1 and research objective 1 of the present study. To achieve that, the empirical data was analyzed using PLS-SEM path modeling and the result of which revealed ( $\beta=0.11$ ,  $SE=0.04$ ,  $t=2.73$ ), which confirmed the assertion of this study concerning the hypothesized relationship between access to natural asset and sustainable poverty reduction in positive term, thus H<sub>5</sub> was confirmed that there is significant positive relationship between access to natural asset and sustainable poverty reduction. This positive confirmation of the hypothesis H<sub>5</sub> is in line with the tenets of the guiding approach (i.e., sustainable livelihood approach) which posited that access to livelihood assets enhances poverty reduction (DFID, 2000; WCED, 1987; Ashley, & Carney, 1999; Chambers, & Conway, 1992).

Consequently, the establishment of the significant positive relationship between access to natural asset and sustainable poverty reduction H<sub>5</sub> by the statistical result (PLS-SEM path modeling) is not surprising as similar studies conducted in other context confirmed that. In essence, the result implies that access to the elements of natural asset (i.e., land for agricultural purposes, water resources for irrigation, fishing, economic trees, and forest resources for commercial firewood purpose, grasses, and solid minerals, sand, and clay e.t.c) could enhance livelihoods sustainability which in turn leads to reduction of poverty. Studies that concurred with the finding of this study

include (Lim, & Mansur, 2015, Kamaruddin, & Samsuddin, 2014; Adunga, 2013; Oumer, & De Neergard, 2011; Van der Berg, 2010, Ansoms, 2010). It should be noted that all the studies were conducted in other contexts different from the context of the present study, thus, the need to conduct the same study in other environments.

Drawing from the above this study collected empirical data from the study area (Sokoto State) and it revealed that respondents of the study do not have access to natural asset as indicated by the descriptive statistics of the latent constructs of the study as it showed a mean value of 2.06 and standard deviation of .77 (see Table 6.46) meaning that on average respondents indicated disagree as per the questions asked which range from access to enough land for cultivation, water resources for fishing and irrigation farming, to mineral and natural resources, economic trees and forest resources for commercial services (see Table 6.41) which in the view of this study made poverty to be imbedded in Sokoto State, and therefore for poverty to be reduced continuously there is the need for households to have unhindered access to natural asset for their livelihoods to be secured so as to walk out of their poverty predicament.

In summary, result of the PLS-SEM path modeling analysis has indicated that access to the elements of natural asset has significant impact on fighting the scourge of poverty. Therefore, going by the result of the path modeling which confirmed H<sub>5</sub>, that there exists a positive linkage between access to natural asset and sustainable poverty reduction suggested that access to natural asset in the study area could lead to sustainable poverty reduction.

#### **8.4.1.6 Livelihood Strategy and Sustainable Poverty Reduction**

Livelihood strategy, otherwise known as coping strategy entails a set of interrelated activities employed or used by individuals and households with a view to supporting their regular or conventional means of income so as to ensure their livelihoods (Su, & Shang, 2012). Similarly, according to DFID (2000) livelihood strategy comprises set of activities that include farm and off-farm activities, migration, remittance and meal adjustment to cushion the effect of shock, stress, and poverty. This connotation is in line with (Bebbington, 1999; Bennet, 2000; Barret, & Reardon, 2000).

In consideration of the above conceptions of livelihood strategy, and in relation to the research question 2 and research objective 2, this study presumed that there is a link between adoption of livelihood strategy and poverty reduction. Accordingly,  $H_6$  was derived based on the assumption of the relationship and this study thus hypothesized that: There is significant relationship between livelihood strategy and sustainable poverty reduction  $H_6$ .

To validate or discard  $H_6$ , this study employed survey design and empirical data were collected from sampled households in the study area. Consequently, PLS-SEM path modeling was used to analyze the data and the statistical results confirmed the existence of a direct strong positive relationship between adopting a livelihood strategy and sustainable poverty reduction as indicated by statistical results as revealed ( $\beta=0.22$ ,  $SE=0.05$ ,  $t=4.49$ ), thereby confirming  $H_6$  in positive direction. This corroborates the assumption of the guiding approach for the study the sustainable livelihood approach (SLA), that adopting a livelihood strategy enhances livelihoods security which in turn protect individuals and households against poverty and



vulnerability to it. Furthermore, result of the statistical analysis from the PLS-SEM path modeling did not surprise the researcher because there are empirical studies that supported the relationship between the livelihood strategy adopted by an individual or household and livelihood outcomes. Therefore, the finding of the present study about the positive relationship between adopting a livelihood strategy and poverty reduction is in line with the findings of other studies (Kumo, 2015; Bosongo *et al.*, 2014; Mendez-Lemus, & Vieyra, 2014; Thi *et al.*, 2013; Su, & Shang, 2012; Nn'an'ga *et al.*, 2011; Olubire *et al.*, 2011; Hahn *et al.*, 2009; Jansen *et al.*, 2006). Basically, previous empirical studies that coincided with the finding of this study on H<sub>6</sub> of the present study on the relation between livelihood strategy and sustainable poverty reduction attested to the efficacy of adopting a livelihood strategy in addressing poverty and vulnerability to it.

Nonetheless, survey conducted in the field from the study area indicated that respondents averagely had chosen rarely as per measures of livelihood strategy with a mean value of 2.12 and standard deviation of .39 (see Table 6.46) which translate to saying that the respondents rarely devise a series of activities or engagements that enable them to earn livelihoods (see Table 6.43). Therefore, with regards to this it can be concluded that lack of effective livelihood strategy in the study area had impacted on the households resulting into their poverty status. In particular, apart from subsistence farming 57.0 percent of the respondents do not engage in any part-time activity that generates income and means of livelihoods (see Table 6.10). Therefore, it is right to say that H<sub>6</sub> of the present study has been confirmed, that relationship hypothesized by this study is not only strong but positive one, thus individuals and

households within the study area should embrace livelihood or coping strategy so as to curtail the effect of poverty and vulnerability to it.

#### **8.4.2 Moderating Effect of Government Intervention on the Significant Relationship between Livelihood Assets, Livelihood Strategy and Sustainable Poverty Reduction.**

As indicated in chapter one, particularly 1.3, research question 3 of this study asked; does government intervention moderate on the relationship between access to livelihood assets (human asset, social asset, physical asset, financial asset, natural asset) and sustainable poverty reduction., while objective 3 of this study (see 1.4) is to examine the moderating effect of government intervention on the relationship between; human asset, social asset, physical asset, financial asset, natural asset, and sustainable poverty reduction. To accomplish the goals of the research question 3 and the research objective 3, this study drafted and tested hypotheses: H<sub>7</sub>, H<sub>8</sub>, H<sub>9</sub>, H<sub>10</sub>, and H<sub>11</sub>.

Similarly, research question 4 (see chapter1 1.3), asked; does government intervention moderate on the relationship between livelihood strategy and sustainable poverty reduction, while research objective 4 (see chapter1 1.4) was set to examine the moderating effect of government intervention on the relationship between livelihood strategy and sustainable poverty reduction and to establish that, H<sub>12</sub> was proposed and tested.

Consequently, all the six (6) hypotheses were tested but only H<sub>9</sub> tested positive and significant, while H<sub>7</sub>, H<sub>8</sub>, H<sub>10</sub>, H<sub>11</sub>, and H<sub>12</sub> were found not to be statistically

significant. The failure in terms of non-statistical significance of the mentioned hypothesized relationships may not be unconnected with the submission of Oshewolo (2011) who asserted that the failure of government intervention in Nigeria particularly on poverty reduction, has to do with corruption, high-handedness, while Garba (2006) attributed it to poor macroeconomic policies, political meddling, poor management of intervention programs and policy priority problem, and Gyong (2012) posited that the problems stem from non-involvement of the presumed target beneficiaries which means there is top-bottom approach in the conception, design, and implementation of the developmental policies to which poverty reduction is a part. Therefore, the failure of the hypotheses to gained statistical significance did not come with a surprise as government intervention issue negates the guiding approach (SLA) adopted by this study as the frame of analysis.

#### **8.4.2.1 Moderating Effect of GI on the relationship between HA and SPR**

As rightly stated (see 8.4.2) based on the 3<sup>rd</sup> research question and 3<sup>rd</sup> research objective of the study, H<sub>7</sub> hypothesized that; government intervention moderates on the relationship between access to human asset and sustainable poverty reduction. The empirical data from the study area were analyzed using PLS-SEM path modeling and the results indicated ( $\beta=0.02$ ,  $SE=0.07$ ,  $t=0.32$ ) that government intervention does not have moderating effect on the relationship between access to human asset and sustainable poverty reduction, thus H<sub>7</sub> was not-supported by the results. Although this study is, to the best knowledge of the researcher, is the first of its kind to introduce moderating variable particularly in the study area, as such could not see existing empirical studies that either confirmed or rejected this kind of hypothesis. Notwithstanding, the result is not a surprise as Sokoto State has been plagued by low

rate of education and high level of illiteracy (NBS, 2010), since education is very fundamental to human asset and in turn ensures employability and promote skills of individuals or households (OPHI, 2015).

Similarly, a report by Sokoto State Ministry of Education [SSMOE] (2010) indicated that educational sector in the state suffers from poor policies, poor infrastructure, lack of enough human and material resources, which could all affect human asset in the state. In terms of material health which is part of human asset Shamaki *et al.* (2013b) asserted that there is lack of medical facilities and drugs in most of the health institutions covered by their study, thus affecting the quality of human capital since the government has not met its obligation in that direction. The above overview and some other practical issues might have contributed to the inability of this study to achieve significant positive result in relation to the moderating effect of government intervention on the relationship between human asset and sustainable poverty reduction.

#### **8.4.2.2 Moderating Effect of Government Intervention on the relationship between SA and SPR**

As already indicated (see 8.4.2) this study, in line with the study research question 3 and research objective 3, which envisaged a moderating effect of government intervention on the relation between access to social asset and sustainable poverty reduction, thus it was hypothesized that: Government intervention moderates on the relationship between access to social asset and sustainable poverty reduction  $H_8$ . To ascertain the position of the presumption this study gathered empirical data and same data were analyzed using PLS-SEM path modeling and the result revealed that  $H_8$  was

not supported. In particular, the statistical result revealed the following values ( $\beta=0.06$ ,  $SE=0.08$ ,  $t=0.73$ ) depicting that  $H_8$  is not supported. The inability of government intervention to moderate the aforementioned relationship may not be unconnected with lack of political will and commitment of the government on the issues of politically educating the populace (Dinneya, 2006), policy direction of the government particularly on NGOs, poor political space for rural dwellers (Bello, 2008) elitist way of running government as well as social and political exclusion of the masses (Omodia, 2009).

Similarly, other reasons may be connected to relatively low budgetary allocations in the area of social protect policy of the government which more often than not leave NGOs with the huge burden of reaching out to the poor (ODI, 2012) thereby limiting the advantages of the poor to benefit from NGOs in the areas of capacity building, social connections, access to microcredit and entrepreneurial skills that could lead them out of poverty. Similarly, the gap between the government and the poor, particularly, those living in the rural area might have also contributed because political connectedness is missing (ODI, 2012) which may hinder access to social asset to the poor both in governmental realm and donors or NGOs. Another important factor that might have contributed may not be unconnected with the policy and laws of the government on the interpersonal relation (civic laws) between individuals in the society with regard to the settlement of dispute that fall short of traditional practice of the society, for instance in the area of soft loan between the borrower and lender through legal enforcement that breeds mutual distrust and hard feelings Kranton and Swamy (1999), which may alter bonding in terms of interpersonal relations,

cooperation and interaction within the communities, thus affecting a fundamental aspect of social asset.

The above points buttressed could be the fundamental reasons that downplayed or limited the ability of government intervention to moderate on the relationship between access to social asset and sustainable poverty reduction in the study area, therefore for government intervention to impact on the relationship between access to social asset and sustainable poverty reduction Sokoto State Government and Nigerian federal government must give necessary attention to social asset through budgetary allocation and enabling policies that would make access to social asset possible and sustainable with a view to unveiling opportunities embedded in it to the people in Sokoto State and Nigerian in general.

#### **8.4.2.3 Moderating Effect of GI on the relationship between PA and SPR**

Deriving from both research question 3 and research objective 3 of this study (refer to 1.3 & 1.4) this study hypothesized that; government intervention moderates on the relationship between access to physical asset and sustainable poverty reduction ( $H_9$ ). To authenticate that this study analyzed the empirically collected data using PLS-SEM path modeling and the result of the analysis revealed that, government intervention moderates positively on the relationship between access to physical asset and sustainable poverty reduction with the interaction effect of ( $PA*GI \rightarrow \beta=0.14$ , and  $t=1.70$ ) at 10% (\*). The moderating effect did not come with a surprise, as already  $H_3$  of this very study confirmed the link between access to physical asset and sustainable poverty reduction which coincided with suggestion of some studies (Lim, & Mansur,

2015, Kamaruddin, & Baharuddin, 2015; Alfonso *et al.*, 2015; Kamaruddin, & Samsuddin, 2014).

Similarly, other factors that might have contributed to the positive confirmation of the moderating effect of government intervention in the study area could be the result of massive investment of financial resources in the area of road construction that linked the 23 Local governments in the state covering about 3,775 miles (Our World/USA Today, 2014). This provision of road network could open economic opportunity for farmers to transport their farm produce thus enhancing their access to market which in turn provide them livelihoods means, for instance, the Sokoto-Illela road which was rehabilitated at the cost ₦1.9 Billion (US\$ 11.5 million), linked Sokoto-central senatorial district and Sokoto-east senatorial districts which are predominantly all year-round farmers producing onions, tomatoes, pepper, garlic and a host of other cash crops in commercial quantity. The road linked almost 2/3 of the Local governments in Sokoto State. Another issue that might have contributed to the confirmed moderating effect of government intervention may be related to the efforts being made by the Sokoto State government in the rehabilitation of hospitals which include 23 general hospitals in the state coupled with the provision of mobile clinics (30 units), training of medical personnel and equipping of hospital with drugs and facilities that gulped about ₦4 Billion (US\$ 32 million) which all have effect on wealth creation, economic well-being and poverty reduction, as sick-ridden society is not a society that can witness prosperity (Our World/USA Today, 2014).

Accordingly, the investments in physical asset coupled with some efforts in the area of rural electrification, rural feeder roads and other infrastructures being put in place

could justify the statistical significance of  $H_9$ , therefore it is incumbent upon this study to assert that government intervention moderates the relationship between access to physical asset and sustainable poverty reduction and as such must be encouraged. However, more efforts need to be re-dedicated in the area transportation, potable water supply and more access to market, although commodity board has just been established to help farmer have access to international markets for their farm produce.

#### **8.4.2.4 Moderating Effect of Government Intervention on the relationship between FA and SPR**

This study draws from both 3<sup>rd</sup> research question and 3<sup>rd</sup> research objective (see 1.3 & 1.4) of the study hypothesized that; government intervention moderate on the relationship between access to financial asset and sustainable poverty reduction  $H_{10}$ . To achieve that, this study conducted a statistical analysis by using PLS-SEM path modeling to ascertain the significance of the presumed moderating effect. However, the statistical result from the PLS-SEM path modeling did not support the presumed moderation, in essence the result presented statistical values as ( $\beta = -0.09$ ,  $SE = 0.08$ ,  $t = 1.07$ ) which signified that hypothesis  $H_{10}$  was not supported, meaning that government intervention, in the context of the present study have no moderating effect on the relationship between access to financial asset and sustainable poverty reduction. The non-significant statistical support for  $H_{10}$  may be as the result of various issues that relate to access to financial asset which are not supported by the government policy, decision or practical issues within the context of the study area.

Fundamentally, it was asserted that, private sector particularly small and medium enterprises (SMEs) contribute to employment generation, creation of wealth and



economic activities (Abubakar, 2013; AbdulSalam, & Tukur, 2014). However, in the context of Sokoto State it was observed that SMEs lack government support in both the financial and technical areas which hampered their operation, therefore, cannot provide jobs and means of livelihoods to the teeming unemployed people in Sokoto State (Abdullahi & Abdullahi, 2013). This has a devastating effect on the cash flow, savings and investment of the individuals and households in the study area. Likewise, a related issue that might have contributed to failure of the moderation effect to be statistically significant is in relation to the non-commitment of the government to partake in the establishment of State-owned micro-finance institutions that could give loan to the farmers and entrepreneurs in the State for both wealth creation and employment generation (AbdulSalam & Tukur, 2014).

Similarly, it was asserted that in the whole of Sokoto State only 5 micro-finance Banks operate but with little to offer in terms of loan and employment generation, coupled with lack of support and patronization from the government, which in turn have negative effect on the people because the little entrepreneurs cannot access loan, unemployed cannot be employed which in the final analysis affect livelihoods of individuals and households in Sokoto State (AbdulSalam & Tukur, 2014). In a similar vein, other contributors could be the lack of concern on the part of government, policy priority misplacement, poor or absence of funding, lack of moral support and unfavorable policies and laws that might have bad effect on the microfinance Bank (Abubakar, 2013; Koko, 2014).

Additionally, NBS (2013) observed that the micro small and medium enterprises (MSMEs) which could have perfected the opportunities for accessing financial

resources to fight poverty and unemployment in Nigeria are facing challenges such as access to finance, poor infrastructure, ever-changing government policies, lack of access to market e.t.c. It is therefore understandable why government intervention has no moderating effect on the relationship between access to financial asset and sustainable poverty reduction as the basic factors are not available, therefore for poverty to be reduced sustainably in Sokoto State government must support the development of micro, small, and medium enterprises, and establish microfinance institutions that would enhance access to loan and finance capital to entrepreneurs and SMEs for employment generation and wealth creation in Sokoto State to fight poverty.

#### **8.4.2.5 Moderating Effect of Government Intervention on the relationship between NA and SPR**

Like the above discussed hypotheses,  $H_{11}$  was formulated based on the ideals of research question 3, and research objective 3 of the present study with a view to answer the question and meet the objective of this study respectively. Thus,  $H_{11}$  hypothesized that government intervention moderates on the relationship between access to natural asset and sustainable poverty reduction.

To meet the goals of both the research question 3 and the research objective 3 empirical data was collected from the sample household and PLS-SEM path modeling was used and analysis conducted, the result was generated as follows; ( $\beta = -0.05$ ,  $SE = 0.08$ ,  $t = 0.67$ ), which indicated that  $H_{11}$  was not supported, in essence it entails that government intervention does not moderate on the relationship between access to natural asset and sustainable poverty reduction. However, the result did not pose a big surprise to the researcher as there a number of issues that might have contributed to

the attainment of an insignificant statistical result which led to the rejection of the hypothesized effect of government intervention. Some of the issues as advanced by Sidi, Kamba and Barau (2017) include absence of government support in relation to finances and technical support to farmers, poor information and orientation, inadequate provision of farm implement, politicization of the selection of agricultural programs' beneficiaries which have substantial effect in the study area as more than 70 percent of the inhabitants are farmer, in such a way that will have bush-fire effect on the livelihoods potentials of households and food security, resulting to hunger, starvation and poverty. Related to that, Adesopo and Asaju (2004) asserted that laws and policies governing the exploration of other elements of natural asset (kaolin, gypsum, limestone etc) that are economical in nature, unequivocally, vested in the Federal and State government, and these laws and policies are with stringent conditions that are very difficult to meet, which undoubtedly hampered the potentials of the households and individuals with regards to their ability to utilize the naturally endowed resources to enhance their livelihoods.

In the same vein, government programs that could have contributed particularly when the interests of the intending beneficiaries have not been taken into consideration in the conception, and implementation of the projects or programs, for instance in construction of dams for irrigational purposes which has intending economic benefit, although with some implication like destroying of farmland, farm produce and houses as pinpointed (Yahaya, 2002). For instance, there is reoccurring flooding in Giyawa, Goronyo, Gada, Wamakko, Rabah, Shagari, Tureta local governments and a host of others as a result of dams' overflow which usually destroys livelihoods of the inhabitants. Related to that is the poor intervention by the government in livestock

production (poultry farming e.t.c) where issues like poor extension services, lack of access to land and lack of financial support and access to microfinance loan are hindering the potentials of households in accessing these elements of natural asset (Maikasuwa, Tanko, & Nabil, 2014). Closely related to other factors that had contributed to the non-support of the hypothesis  $H_{11}$  could be poor natural resource conservation and governance policies that might have made the sub-sector unattractive (Okoli & Uhembe, 2015). The implications of the above issues raised could lead to the inability of the hypothesized moderating effect to be statistically supported as the supposed complementary role expected from the government machinery is not positive. Therefore, for government intervention to influence the relationship between access to natural asset and sustainable poverty reduction Sokoto State government and Nigerian government must make laws and policies that support households towards harmonious access to natural asset with a view to enhance their livelihoods and thus combat poverty in Sokoto State.

#### **8.4.2.6 Moderating Effect of Government Intervention on the relationship between LS and SPR**

The development of the hypothesis  $H_{12}$  was based on the study's 4<sup>th</sup> research question and objective respectively, built on the premise of sustainable livelihood framework (DFID, 2000) on the anticipated role of institution and policies in achieving sustainable livelihoods. Therefore, drawing from the above this study hypothesized that: Government intervention moderate on the relation between livelihood strategy and sustainable poverty reduction  $H_{12}$ .

To evaluate that, this study ran an analysis on the empirical data gathered from the survey conducted using PLS-SEM path modeling and that the result was found to be ( $\beta=0.06, t=0.86$ ) signifying that the interaction effect was not supported by statistical analysis, therefore by the presented result the hypothesis  $H_{12}$  was not supported.

The geographical location of the study area has made issues of livelihoods, particularly food production a source of concern Folaji (2007), being mostly a desert area which also witness low rainfall, therefore livelihood strategy must be employed to cope with the challenges of low productivity in farm produce, thus resulting to interstate or cross-border migration, the implication of which spilled over on food security since the productive able-bodied men migrate in search of greener opportunities while locally issue of meals becomes a life-threatening one resulting into consumption of food of less nutritional value, borrowing of food, skipping meals (Thelma, 2015). In this context the failure of government could be seen in its inability to curtail the phenomenon of desertification that is fast pushing the inhabitants of the area in shocks and vulnerable to poverty, as the policies are inconsistent, and lack proper implementation, lack of technical support to cushion the effect of the desertification (Thelma, 2015). Similarly, the non-proactive approach of government pushed farmers, who supposed to be food producers, out of frustration to devise means of sustenance and abandoned agriculture which in the final analysis affect the whole society as food producers had abandoned food production, thus food shortage and insecurity (Ango *et al.*, 2014). Consequently, for government support to be effective towards enhancing livelihood strategy Sokoto State government and the Nigerian government must take a proactive steps through government-people interface, policies and laws that would support livelihoods sustainability.

Conclusively, what has become obvious is that, the inability of government to provide basic farming facilities, soft loan and public-private partnership in the area of agriculture, entrepreneurship and enterprise development as well as policies that would enable lucrative agribusiness could have contributed to the attainment of insignificant result as far as the hypothesis testing of moderating factor. This impliedly could be seen as the reasons why government intervention does not have moderation effect on the relationships between human asset, social asset, financial asset, natural asset, livelihood strategy and sustainable poverty reduction in Sokoto State. Lastly, it is imperative to note that, government-community link in the area of poverty reduction and community development is very critical as it enables the government and the community to come closer to share ideas and chart a common course for the betterment of the rural communities. Accordingly, lack of this synergy in the study could be one of the contributing factors that made government intervention in the study area to be ineffective and therefore could not enhance access to livelihood assets and sustainable poverty reduction in Sokoto State.

### **8.5 Study Implications**

This study has a number of implications deemed important, which need further elaboration, which include theoretical, practical/managerial, methodological and empirical implications that would benefit governments, development partners, non-governmental organizations, research institutions, academics and student in the field of development management and livelihoods studies. In consideration of the findings of the present study, this study has some very important implications, particularly on sustainable and permanent rather than immediate or temporary measures towards reducing poverty in Nigeria and Sokoto State in particular. The study offered

theoretical, practical, methodological and empirical implications, which the study discussed in the succeeding part (sub-sections) below in the order they were mentioned by this study.

#### **8.5.1 Theoretical Implications**

The presented study presented evidence, empirically, concerning the hypothesized relationships indicated in the research framework. Exclusively, the study highlighted the moderating effect of government intervention on the relationship between human asset, social asset, physical asset, financial asset, natural asset, livelihood strategy and sustainable poverty reduction in Sokoto State. The present study has 12 hypotheses of which 7 hypotheses are supported, whereas the other 5 hypotheses are not-supported.

Earlier studies on poverty and vulnerability to it investigated the influence of different phenomena that cause poverty and in relation to that discussed variables, which they conceived as the measures of poverty based on which they suggested how poverty could be tackled or reduced (Babbinton, 1997; Amaghionveodiwe, & Osinubi, 2004; Wisor, 2012; Stewart, 1985; Sen, 1993, Stewart, Saith, Franco, & Harris-White, 2007, Alkire & Foster, 2007; Alkire & Foster, 2009; Alkire, & Santos, 2010; Robb, 2000; Diaz, 2003, Anyebe, 2014; OPHI, 2015, NBS, 2012; 2015; Kamaruddin & Baharuddin, 2015; Kamaruddin & Samsuddin, 2014, Lim & Mansur, 2015, Kumo, 2015).

However, studies with the combination of all the five livelihood assets (HA, SA, PA, FA, NA) and livelihood strategy (LA) as variables influencing sustainable poverty reduction (SPR) are very scanty and only available in South-East Asia (Malaysia) and

some Asian countries and not available, to the best knowledge of the researcher, in the context of the present study (Sokoto State) in particular. As such the present study tested the structural correlation between HA, SA, PA, FA, NA, and LS as important factors influencing sustainable poverty reduction in a single model, and the results indicated that HA, SA, PA, FA, NA, and LS have significant positive impact on sustainable poverty reduction. Furthermore, this study also adds knowledge on the existing poverty and sustainable livelihoods literature on the relevance of government intervention on influencing sustainable poverty reduction. The results of this study additionally provided empirically established support to the framework of the study. The study also proved the assumption of sustainable livelihood approach by empirically providing evidence to validate the assertion of the approach/theory.

Similarly, few previous studies Kamaruddin and Baharuddin (2015), Kumo, (2014), Lim and Mansur (2015) and Kamaruddin and Samsuddin (2014) have also suggested the role of government, particularly, in relation to access to livelihood assets and sustainable livelihoods but did not specifically tested it as a moderating factor, and have not considered, categorically, livelihood strategy as variable equal to livelihood asset in ensuring sustainable poverty reduction.

In this regard, the present study has integrated livelihood strategy as part of independent (predictor) variables influencing poverty reduction on sustainable basis. Similarly, the study has tested the moderating effect of government intervention on the relationship between HA, SA, PA, FA, NA, SL and SPR, although not all the interaction effects were supported, however interaction effect between PA and GI was found to be positively significant, thus making another contribution to sustainable



livelihood literature based on the sustainable livelihood framework (DFID, 2000, 1999).

In the same vein, the review of the relevant related literature on poverty reduction particularly using sustainable livelihood asset and livelihood strategy indicated that almost all the studies were conducted in Asia particularly Malaysia, Europe and very few in Africa, while visibly none in Sokoto State which is the study's area. Therefore, this study, base on the knowledge of the researcher, is the first of its kind in the study area, and amongst very few (if any) in Nigeria that employ sustainable livelihood approach DFID (2000, 1999), Krantz (2001), Ashley and Carney (1999), Chambers and Conway (1992) in the empirical study of poverty by using access to livelihood assets and livelihood strategy as factors that influence sustainable poverty reduction.

#### **8.5.2 Practical/Managerial Implications**

Firstly, Government at both the national and state levels in Nigeria is saddled with the responsibility of ensuring the common good of the people, thus poverty alleviation, reduction or eradication is expected to be part of the task before the government (Loewen, 2009). In line with the task before government and policy-makers, particularly, the machinery of development planning and management in governmental realm which is to ensure proper designing of policies and programs to effectively meet government goals of reducing poverty.

Therefore, in consideration of that fundamental objective, government in Nigeria and Sokoto State in particular must do all things possible to ensure that poverty is reduced to the minimum if it cannot be eradicated completely. The literature review conducted

by this study found that individuals and households that are within the shackles of poverty, basically, lack livelihood assets and have not mostly employed livelihood strategy to complement their income in securing livelihood assets (Lim & Mansur, 2015; Kumo, 2015; Alfonso *et al.*, 2015; Gounder, 2013). Similar literature reviewed concerning Nigeria suggested that, there is high incidence of poverty in Nigeria, and Sokoto State in particular that was identified amongst the poorest states in Nigeria (OPHI, 2015; NBS, 2015; NBS, 2012; Anyebe, 2014).

However, it was asserted that different programs were brought forward by government to alleviate poverty, but despite investment made in terms of financial resources the poverty incidence remains high (Ekpe, 2011; Oshewolo, 2011, Oyemoni, 2003; Okoye, & Onyukwu, 2007). Similarly, poor policies, lack of political will in the implementation of policies, mismanagement of resources and misplacement of priorities and non-involvement of the target beneficiaries in the conception, design, and implementation of poverty reduction programs were adduced to be the reasons for the high incidence of poverty in Nigeria and Sokoto State in particular. This indicates that there is need for the government and the authorities concern to look inwardly to re-assess policies and programs designed to tackle poverty in Nigeria and Sokoto State in particular.

Considering the findings of this study which empirically confirmed relationship between access to livelihood assets (human asset, social asset, physical asset, financial asset), adoption of livelihood strategy and sustainable poverty reduction, therefore, in conformity with the finding of this study and other empirical studies reviewed the importance of access to livelihood assets and livelihood strategy in reducing poverty

has been established, therefore it is expected that government and relevant institutions, development partners, and other stakeholders in Nigeria and Sokoto State in particular would employ the sustainable livelihood approach in the designing and implementation of poverty reduction policies. In particular, Nigerian and Sokoto State governments and policy-makers should make efforts toward ensuring accessibility to livelihood assets to the households possible in the following respects;

**Human Asset:** Government at both the federal level and Sokoto State should invest sincerely in the formal education sector particularly at the level of basic and secondary education so as to guaranty the future of next generation and usher in poverty reduction. A higher level of literacy has the efficacy of leading to poverty reduction as it enhances human capital development and employability potential as seen in the case of Malaysia where success story of reducing absolute poverty from 16.5 percent in 1990 to 0.6 percent in 2014 (Economic planning unit Malaysia [EPU], 2015). Similarly, investment on education has resulted in high rate of primary education rate of 97.9 percent and secondary education rate of 90 percent, and an overall adult literacy rate of 94.6 percent respectively which have significant effect on the future of Malaysian society in terms of poverty reduction (Economic planning unit Malaysia [EPU], 2015). Furthermore technical and vocational education and training (TVET) should be properly developed and encouraged by the Nigerian government and Sokoto State government so as to provide employment opportunities and wealth creation and as well reduce dependence on government job by the people, for instance, the Malaysian government invests so much and made enabling policies which strengthened the development of technical and vocational education which helped in reducing unemployment rate to 3.5 percent (IMF, 2017).

Similarly, government in Nigeria and Sokoto State should prioritize entrepreneurship education right from secondary school to higher institutions of learning thereby making it compulsory so as to inculcate the virtue and spirit of entrepreneurial skills in young generation towards self-reliance. Not only that, government should set up a special fund for entrepreneurship development with which potential entrepreneurs can access start-up capital for actualizing their potentials. Additionally, the government should set up entrepreneurial skills acquisition centers for the development of future entrepreneurs in the area of agribusiness, production of detergents, agro-chemicals, household utensils and other goods needed in the society which would further create wealth and generate employment.

#### **Social Asset:**

In the area of accessibility to social asset government at both the federal and Sokoto State level should encourage the development of non-governmental organizations and community-based association which are very fundamental in combating poverty and opening of the doors of opportunities in terms of access to technical support, knowledge and skills as well as mutual interaction between and amongst peoples of the same and different ancestral background which further cement relationships, enhance social interaction, enable bonds, linkages and bridging the social gap that exist within the society. More to that is also the issue of addressing socio-political and economic inequality that exist amongst individuals and households in Nigeria and Sokoto State, and in particular political participation and socialization should be encouraged.

In a similar vein, government in Nigeria and Sokoto State could borrow from Malaysia's social welfare policies adopted during the administration of Prime Minister Dr. Mahathir Mohamad referred to as "rigorous social policies" (1981 – 1997). Basically, the policies bordered on social intervention programs aimed at combating poverty through targeting hardcore poor, development and involvement of non-governmental organizations in fighting poverty and decisions therewith which ushered in microcredit opportunities and public/private partnership in the quest to address the poverty scourge (Hatta & Ali, 2013). Overall, holistic social safety nets should be developed and introduced which include social protection, food for the poor programme, special education on social values and social integration so as to imbibe the culture and spirit of togetherness and community self-help in the minds of the people which in the final analysis would have effect on the quest for poverty reduction in Nigeria and Sokoto State in particular.

### **Physical Asset**

In terms of physical asset government at federal and Sokoto State levels should embark on policies and programs aimed at massive infrastructural development in the area of, but not limited to electricity supply, provision of portable drinking water, sanitation facilities, public health facilities and housing through provision of decent housing system to the people. For instance, according to Economic Planning Unit [EPU] (2016) 97.6 percent of Malaysia's population has uninterrupted access and supply of electricity, whereas another 95.1 percent have access to portable (tap-water) drinking water, while in the area of housing 76.1 percent are proud house-owners, with house-ownership at the rural level at 75.3 percent. Fundamentally these giant strides helped in addressing the menace of poverty from all high poverty incidence of poverty of 49.3

percent in 1990 to only 0.6 percent in 2014. Similarly, more roads network need to be constructed in the downtrodden areas of the society to make market more accessible particularly agricultural produce and ensure ease access to social infrastructures like hospitals and school to the rural environs. Additionally, more primary and secondary schools need to be built as there are still households in rural communities whose children do not have access to schools close by and therefore have to cover a long distance to access school which is making other households to be reluctant towards enrolling their wards (dependents) into primary and secondary schools.

#### **Financial Asset**

On financial asset government at Federal and Sokoto State should employ effective policy frameworks that would support and encourage entrepreneurial development through support to small and micro scale business in terms of capital, microcredit schemes, loan of free interest or very marginal interest for willing entrepreneurs. Similarly, government should devise unemployment financial benefits or cash transfers to the teeming unemployed persons and household so as to mitigate the effects of unemployment like insecurity and crime prevalence in Nigeria and Sokoto State in particular.

Furthermore, policy makers at the Federal and Sokoto State should embrace and copy from the Malaysia's experience in the area of microcredit schemes which affords the poor an opportunity to access loan through what is locally called Amanah Ikhtiar Malaysia (AIM) established in 1987 by the Government of Malaysia. Basically, what government is doing through Amanah Ikhtiar Malaysia is to grant free-interest loans to poor households in both rural and urban areas who do not have collaterals for

accessing loan from commercial banks (Mohamed & Xavier, 2015). It was asserted that the Malaysian government through AIM disbursed from 1987 to 2015 USD \$2.97 Billion (RM 13Billion) to 366,000 borrowers with a great testimony from the benefitted households on how robustly their income and well-being improved (Harun, 2015).

Furthermore, policy-makers in Nigeria and Sokoto State should also embrace the practical approach adopted by the Malaysian government in the area of micro and small enterprises through establishment of community shops referred to as IMalaysia People's Store (Kedai Rakyat IMalaysia-KRIM) which sell basic goods for households' consumption at affordable prices (Abdellati, Elhadary, & Samat, 2016). Therefore, IMalaysia people's store is meeting the basic demands of the people in terms of basic goods for life sustenance at on hand while enabling the people to save money on the other hand instead of expending huge amount of money for those same goods in the open market and private shops.

Additionally, policy-maker in Nigeria and Sokoto State in particular should encourage and develop agri-business by making enabling laws and policies that support commercial agriculture in both small and large scales as in Nigeria and Sokoto State in particular as majority of the people are farmers or practice agriculture as major source of livelihoods but with limited resources and lack of modern equipment that can enable them to engage in robust commercial farming activities in poultry farming and livestock rearing, fish farming, and aquaculture which help in generation of employment and wealth creation.

Specifically, the Sokoto State government should establish medium and micro scale agro companies in the state so as to attract foreign investors and foreign capital which would open further opportunities for the people in the state in terms of entrepreneurial skills, employment and wealth creation. This will economically empower people in Sokoto State and bring to them succour in terms of livelihoods. Closely related, the companies would also serve as market to agricultural raw materials for the rural farmers, particularly, those that produce cash crops.

### **Natural Asset**

In the area of natural asset government and policy maker in Nigeria and Sokoto State should undertake lands reform to address the imbalance that exists within the society as majority of the people are farmers who only depend on land as source of livelihood and could only engage in subsistence farming because of lack of enough land, while others do not farm at all because they do not own land for cultivation. Similar to that government should develop agricultural extension services to avail households the opportunity to learn the art of modern agriculture as well as provide enough fertilizer, improved seedlings, modern farm implements to farming households at affordable and subsidized rates. In the same light government should make enabling laws and policies that lead to access and development of natural resources for commercial activities as a diversification method so as to address over-dependence on agriculture by the people which in essence could open other doors of opportunities to the people thus affecting their livelihoods.

Additionally, Sokoto State government should address issues of natural disasters like floods and erosion that is destroying farmland thereby posing threats (vulnerability) to



the livelihoods of the households as well as their homes, for instance Giyawa in Goroyo local government which is an agrarian community where onions, pepper, garlic and ginger and a lot of fresh vegetables are produced flooding becomes a reoccurring problem every year with farmlands, infrastructures and houses and in some cases lives are being lost. The depletion of the land affects a lot of households as their heads become landless so there is serious threat to their livelihoods coupled with a large number of household heads becoming unemployed since farming is the mainstay of the inhabitants of the community. Similar devastating trend subsist in Shagari and Tureta local governments where overflow of Shagari dam reoccurringly destroys farmlands and houses, where substantial part of some villages like Gam-Gam, Lambara, Kambama and Lofa have been destroyed, while a number of villages have been completely destroyed with no trace, the implication of which affect not only the immediate communities but the entire political economy of Sokoto State in terms of poverty rate and high level of unemployment.

Base on the above, therefore, it suffices to say that government has a significant role to play towards making livelihood assets accessible to the households, therefore government and policy makers in Nigeria and Sokoto State in particular, should make concerted efforts towards making livelihood assets accessible which in turn would lead to sustainable poverty reduction in Nigeria and Sokoto State in particular.

Conclusively, this study pinpoints that access to human asset, social asset, physical asset, financial asset, natural asset, livelihood strategy and effective government intervention are critical to ensuring sustainable poverty reduction. Therefore, government should adopt and adhere to the tenets of sustainable livelihood approach

(SLA) and its framework in the design and implementation of poverty reduction programs, while households in the study area should try and access livelihood assets and devise more ways (livelihood strategy) of making livelihoods so as to enhance their livelihood outcomes and general well-being.

### **Government Intervention**

The empirical data from the field indicated that there is disillusion on the part of the respondents (see Table 6.44) about government support or intervention that should support livelihoods and asset acquisition, and enhance participation of the rural communities in the process of policy-action related to community and rural development. In this context, Nigerian government and Sokoto State in particular can borrow from the Malaysian experience through the establishment of a framework that create synergy and interface between the policy actors (government, policy makers) and the rural communities in the area of progress monitoring, contact and information sharing in such a way that the rural communities would be incorporated into rural or community development related decisions, thereby allowing the involvement of the supposed beneficiaries of government developmental policy or decision.

In the Malaysia context, village development and security committee (Jawatankuasa Kemajuan dan Keselamatan Kampung [JKKK]) was established to monitor, report and share information about the development of the rural communities which by and large creates an interface between the government and the rural communities in Malaysia and provides a platform for consultation and participation of the rural communities on issues that affect their wellbeing and overall development of their communities (Kamarudin & Saad, 2017). Borrowing from the Malaysian experience, particularly a

prototype of JKKK, linkage between the government and the rural communities would be established which on one hand allow government to have first-hand information (complaints) from the rural inhabitants about the areas where intervention or government support is needed the most, while on the other hand it gives the rural communities a sense of belonging and involvement in terms of policies that affect their wellbeing and the overall community development of the rural communities.

Additionally, the establishment of the contact platform will enhance government-public trust, encourage participation and change the trend of top-bottom approach in decision and policy making, to a more inclusive and inward, as well as horizontal platform for policy action as representative of the rural communities (traditional rulers, statemen, leaders of thought) are directly involved in making decisions that affect their wellbeing and comprehensive development of their communities.

### **8.5.3 Methodological Implication**

This study, apart from theoretical and practical/managerial implications, includes methodological implication. In the first instance, past studies on sustainable livelihoods and poverty reduction used, substantially, SPSS which is first generation statistical package and Amos. To the best knowledge of the researcher, very little, if any, studies used PLS-SEM for analysis to generate results therefore this study makes substantial contribution by using PLS-SEM in conducting analysis and evaluation of empirical data of the study. Also, the present study used adapted measuring items which require further study in other contexts to validate their reliability and validity on one hand, while on the hand measures were developed and quantitative content validity was employed to determine the reliability of the items in measuring the

constructs they intend to measure (Lawshe, 1975). To further assess the overall reliability of the instrument pilot study was conducted (Sekaran & Bourgie, 2009). To the best knowledge of the researcher this study is amongst the few (if any) elsewhere, and first of its kind in the study area that followed such steps in ensuring the reliability of the instrument (items and constructs). Additionally, this study is first of its kind in the study area (to best knowledge of the researcher) to adopt the Krejcie and Morgan (1970) sample size determination, as well as G-Power analysis to ascertain the required sample size needed for running of the research model and the result analysis (Faul *et al.*, 2009).

Another methodological contribution of this study is the nature of data used particularly in the study area, as it used purely primary data, unlike some poverty-related studies in the study area that relied, mostly, on secondary data. It is therefore important to say that the present study makes substantial contribution to methodology and overall livelihoods and poverty literature, particularly, in the area of the present study.

#### **8.5.4 Empirical Implication**

This study also contributes empirically to the body of knowledge, particularly, in the context (environment) of the present study specifically on sustainable livelihoods studies. It provides empirical technique of conducting livelihoods research that can benefit individuals and development partners, NGOs and academic researchers. Additionally, this study empirically provides to the authorities concerned the first-hand information of where intervention is required as the researcher transversed all the 3 senatorial districts of Sokoto State and importantly the data were gotten from mostly

rural dwellers. In essence, this study provides empirical evidence that majority of the rural dwellers do not feel the impact of government policies that support livelihoods accomplishment, and also uncovered a kind of disconnect between the government and the people, particularly, the rural populace in the study area, therefore the Sokoto State and the Nigeria government can benefit from the study and develop effective mechanisms for reaching out to the, perhaps, disillusioned rural populace both in study area and beyond.

Furthermore, academic community could benefit from the study by understanding that empirical studies on livelihoods and poverty can employ PLS-SEM in the analysis and estimation of the drivers for poverty reduction and not necessarily SPSS, econometrics, Amos or Lisrel. Additionally, the study contributes by providing practical experiences on developed and adopted strategies by other countries or societies, particularly Malaysia, towards poverty eradication in terms of intervention programs and plans of action aimed at addressing the scourge of poverty. In summary, this study contributes in different respects not to only Sokoto State government but to the Nigerian government in general, the development partners, non-governmental organization, households, students, researchers, research institutions, the academia and overall literature on sustainable livelihoods and poverty reduction mechanisms.

### **8.6 Recommendation for Poverty Line Index**

Basically, a poverty line takes into account the minimum income needed either per day or per month to cater for individual's or households' needs of food, close, medicine and other essential needs of transportation, leisure, and entertainment (Bourguignon, 2006). However, an objective poverty line consists of both income component, food

intake and basic needs as poverty does not means only lack of minimum level of income required to meet basic needs (Alam *et al.*, 2017). Accordingly, this study after careful look at the poverty line in Nigeria and some selected countries in Americas, Asia and Europe (see Table 2.1, 2.2, 2.3) has concluded that the Nigerian poverty line is naïve and poorly structured as it has not fundamentally captured the reality of market forces and actual prices of goods and services as well as size of households in adopting the US\$1 per day as the national poverty line (NPL), although even with that majority of Nigerians are classified as poor because they cannot afford \$1 a day which is equal to ₦305 as per official rate which sums a total income of ₦9,150 per month which cannot even buy a bag of 50kg rice which sells between ₦13,000 to ₦15,000. The government in Nigerian and Sokoto State should draw a poverty line that takes into account the different peoples' economic, geographical and social demographic traits as done for instance in Malaysia where national poverty line considers regional location, place of residence (urban or rural), poor and hardcore poor.

In view of the above, this study recommends the structure below for the construction of poverty lines that take into consideration urban and rural divides base on the cost of living, purchasing power and quality and quantity of basic necessities as well as type of commodities primarily consumed in the urban and rural areas.

Table 8. 1

*Estimates on Expenditure for Basic Consumptions per Month*

Household Size	Urban Estimated Expenditure per Month	Rural Estimated Expenditure per Month
1 Person	₦15,000 = RM 201.66 = US\$49.18	₦12,000 = RM 163.58 = US\$39.34
2-3 persons	₦35,000 = RM 477.54 = US\$114.75	₦20,000 = RM 272.88 = US\$65.57
4-7 persons	₦55,000 = RM 750.42 = US\$180.33	₦30,000 = RM 409.32 = US\$98.36
8-10 persons	₦75,000 = RM 1,023.30 = US\$245.90	₦40,000 = RM 545.76 = US\$131.15
11-15 persons	₦100,000 = RM 1,364.40 = US\$327.87	₦50,000 = RM 682.20 = US\$163.93
16-20 persons	₦120,000 = RM 1,637.28 = US\$393.44	₦60,000 = RM 818.64 = US\$196.72
21-25 persons	₦130,000 = RM 1,773.72 = US\$426.22	₦70,000 = RM 955.08 = US\$229.50
26-30 persons	₦140,000 = RM 1,910.16 = US\$459.01	₦80,000 = RM 1,091.52 = US\$262.30

31 & Above	₦150,000 = RM 2,046.60 = US\$491.80	₦90,000 = RM1,228.53 = US\$295.08
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Source: Field Survey Data (2016)

Base on the Table 8.1 above this study proposes for Nigeria a poverty line that has two-folds (urban poverty line and rural poverty line) to accommodate the disparity between the urban dwellers and rural dwellers in the area of income and basic prices of commodities and basic essentials of life. Similarly, at both the urban and rural areas the study also deemed it fit to distinguish between poor and hardcore poor which brings further sub-division of both the urban and rural poverty lines, thus urban poverty line would compose of (a) urban poor, and (b) urban hardcore poor, while rural poverty line would consist of (a) rural poor, and (b) rural hardcore poor, with a further clear cut consideration for the household size. Related to the aforementioned, some basic indicators or basic necessities were considered as well as their corresponding estimated costs in the market taken into account. In specific terms the following indicator were considered (a) food and essential commodities; (b) health and medicine; (c) clothing; (d) transportation; (e) education; (f) utility bills. Deriving from the above this study recommends the urban poverty lines below:

Table 8. 2

*Proposed Comprehensive Urban Poverty Line*

Person/Household Size	Urban Poor	Urban Hardcore Poor
1 person	₦13,000 = RM177.35	₦12,000 = RM163.71
2-7 member-household	₦35,000 = RM477.49	₦25,000 = RM341.1
8-15 member-household	₦55,000 = RM750.34	₦45,000 = RM613.12
16-25 member-household	₦100,000 = RM1,364.26	₦80,000 = RM1,091.41
26 & above members	₦130,000 = RM1,773.53	₦100,000 = RM1,364.26

Source: Field Survey Data (2016)

The above Table 8.2 indicates recommended urban poverty line by this study which considers different strata of the sizes of household and their corresponding minimum income needed per month for the up-keep of the households. The study has taken into

consideration of the prevailing prices of food and essential commodities and other social services for a minimum decent living and wellbeing in the urban areas/cities.

Similarly, the study recommends and constructed a rural poverty line which recognizes the peculiarities of the rural areas therefore, Table 8.3 below describes the rural poverty line.

Table 8.3

*Proposed Comprehensive Rural Poverty Line*

Person/Household Size	Rural Poor	Rural Hardcore Poor
1 person	₦12,000 = RM163.7	₦11,000 = RM150.06
2-7 member-household	₦17,000 = RM231.92	₦15,000 = RM204.64
8-15 member-household	₦30,000 = RM409.28	₦25,000 = RM341.06
16-25 member-household	₦45,000 = RM613.92	₦40,000 = RM545.7
26 & above members	₦60,000 = RM822.13	₦50,000 = RM682.13

Source: Field Survey Data (2016)

The above Table 8.3 indicates recommended rural poverty line by this study which considers different strata of the sizes of households and their corresponding minimum income needed per month for the up-keep of the households. The study has taken into consideration the prevailing prices of food and commodities and other social services for a minimum decent living and wellbeing in the rural areas.

In conclusion, the motive behind construction and recommendation for a more realistic and comprehensive poverty line that is based on the reality of the prices of food and basic essential commodities and social service in both the urban and rural areas, is to move away from a too-old poverty line of US\$1 per day that in practical terms is not adequate for larger household and even individual, thus the need for a more adequate poverty line to accommodate the present reality in Nigeria.



### **8.7 Limitations of the Study and Recommendations for Future Research**

Notwithstanding the significant contributions made by this study in the theoretical, practical/managerial, methodological and empirical realms as with various exploratory studies, it should be noted that limitations of this study need to be recognized. Nonetheless, the limitations or shortcomings of the study provide opportunities for the craving of further researches. Amongst the limitations of the present study include firstly, the cross-sectional nature with which the data for the study were collected from a number of sampled rural households in 12 Local governments in Sokoto State within a very close time-range, therefore care need to be taken while making inferences. Consequently, upcoming/future studies may aspire to redress the limitation of the present study by considering collecting longitudinal data and from other local governments of Sokoto State or from the entire State and Nigeria to a large extent.

Secondly, all the constructs of this study were measured as unidimensional in nature therefore further studies may try and explore more by using the constructs as multi-dimensional construct. Thirdly, this study introduced government intervention, categorically, as a moderator, although its interaction effect was not statistically significant in five out of six hypotheses, therefore, future studies may explore it further in the context of the present study or other contexts to ensure its reliability and validity.

Fourthly, this study concentrated on only five livelihood assets and livelihood strategy as predictors, there is the need for further study to employ information asset (Lim & Mansur, 2015). Lim and Mansur (2015) suggested that for households to acquire livelihood asset, they need to have access to required information. Fifthly, this study adopted pure quantitative approach as such there could be an important qualitative

component that has not been considered by the present study, therefore, future study may adopt for a mixed method approach to have more comprehensive findings.

Lastly, the present study used PLS-SEM 2.0 for data analysis which may have some limitations (Hair *et al.*, 2016), therefore future study may employ PLS-SEM 3.0, Adanco or any structural equation modeling (SEM) family member of second-generation statistical packages for more precision to avoid any shortcoming associated with version 2.0 of PLS-SEM.

## **8.8 Chapter Summary**

This chapter reviewed the findings of the study by a recapitulation of the results of hypothesis testing for the direct and indirect relationships. It also discussed the findings in detail beginning with the direct relationship between livelihood assets, livelihood strategy, and sustainable poverty reduction. Similarly, the chapter discussed the findings of the interaction effect of government intervention on the relationship between access to livelihood assets, livelihood strategy, and sustainable poverty reduction, and in all respects (direct and indirect relationships) influencing factors were discussed and instances cited.

Similarly, the chapter discussed on the study's implications which include the theoretical contribution, managerial contribution, methodological contribution and empirical contribution of the present study. In particular, the chapter drew examples from Malaysia's experience in poverty reduction strategies and policies. It also discussed on the recommendation about an objective and balanced poverty line for Nigeria taking into cognizance of the present economic and market-price reality.

Further to that, limitations of the study were discussed, and recommendations for future research were stressed in the chapter.

## **8.9 Conclusions**

At this point, this study found it worthwhile to have an overview on the asset-based poverty level in Sokoto State as per the empirical data used in the present study. In particular, the study used descriptive statistics of indicators and their corresponding latent constructs.

### **Human Asset:**

Empirical data from the study area revealed that there is lack of basic elements of the human asset in Sokoto State as the descriptive statistics (frequency) for instance indicated that 85.8 percent of the respondents did not attend any training, 87.3 percent lack vocational skills, and 62.9 percent lack education (see Table 6.38). Overall, descriptive statistics (see Table 6.46) shows a mean of 3.09 and standard deviation of .67 (see Table 6.46) signifying that the average response by the respondents was 'disagree' which implies that there is lack of access to human asset, thus there is poverty of human asset in Sokoto State.

### **Social Asset:**

Similarly, the finding of the study base on empirical data from the study area (Sokoto State) indicated that there is lack of access to social asset as shown by the response rate per indicator of the latent construct, for instance, 88.5 percent do not have access to social networks, 61.3 percent belong to nor association, and 84.5 percent of the respondents do not represent their community at any forum (see Table 6.39) assumably

the respondents had averagely chosen disagree with regards to the question of the instrument, while the descriptive statistics concerning social asset showed a mean of 1.93 and standard deviation of .82 (see Table 6.46) signifying that respondent submitted that they have no access to social asset thereby indicating that there is poverty of social asset in Sokoto State.

### **Physical Asset**

Furthermore, findings of the present study base on the empirical data used indicated that there is deficit in terms of access to physical asset in Sokoto State for instance the frequency using descriptive statistics revealed that, 81.5 percent have nor household assets, 80.5 percent have no access to good drinking water, 98.4 percent do not have access to good cooking fuel, and 85.8 percent lack access to sanitation facility while 77.7 percent do not have electricity (see Table 6.40), and the descriptive statistics of the latent construct also revealed a mean value of 2.23 and standard deviation of .65 (see Table 6.46) indicating that respondent averagely had chosen disagree with the statements of the instrument. Therefore, both statistical results showed apparent lack of access to physical asset in Sokoto State thereby affirming that there is physical asset poverty in Sokoto State.

### **Financial Asset**

Additionally, the findings of the present study using the empirical data from the field survey revealed that, there is poor access to financial asset in Sokoto State as the result of the descriptive statistics (frequency) of the indicators of financial asset revealed for example, 85.8 percent never receive government cash transfer, 71.2 percent never receive remittance from family members, and 69.7 percent never earn labor income

(see Table 6.41), whilst descriptive statistics of the latent construct revealed a mean of 1.56 and standard deviation of .39 (see Table 6.46) which indicated that majority of the respondents clearly have no access to financial asset in Sokoto State which implies that there is poverty in terms of financial asset in the study area. Similarly, other ways of accessing and exploring financial asset are not harnessed properly by the respondents as indicated in Table 6.41.

### **Natural Asset**

With respect to natural asset which is basic to livelihoods sustenance the finding of the present study using empirical data from the study area suggested that, there is deficit of natural asset in Sokoto State as frequency of responses as per individual measuring indicators of the latent construct showed that 83.6 percent have no access to mineral resources for commercial purpose, 79.9 percent have no access to economic trees, and 79.3 percent do not have access to water resources for commercial fishing (see Table 6.42), and the overall descriptive statistics of the latent construct (natural asset) indicated a mean value of 2.06 and standard deviation of .77 (see Table 6.46) suggesting that respondents averagely did not agree with the statements as per access to natural asset which showed that there is natural asset related poverty in Sokoto State which by implication affects sustainability of livelihoods.

### **Livelihood Strategy**

Accordingly, livelihood or coping strategy as frame for accomplishing sustainability of livelihoods has been considered in the study area, and the empirical data from Sokoto State was used to evaluate, comprehensively, livelihood activities and processes engaged by the respondents and the finding revealed that livelihood strategy

has not been comprehensively employed which has resulted to difficulty in securing livelihoods and curtailing vulnerability to poverty in Sokoto State. Results revealed that strategies mostly employed in Sokoto State are largely on securing the households off food needs as shown by the descriptive statistics results (see Table 6.43), while other forms of livelihood activities have not been fully explored or harnessed. Similarly descriptive statistics of the latent construct indicated a mean value of 2.12 and standard deviation of .39 which showed that the average response from the samples rest on “rarely” (see Table 6.46) meaning that respondent do not exhaust all the avenues or livelihood activities, thus this study assumed that lack of effective livelihood strategy in the study area has contributed to the poor access and ownership of livelihood assets in Sokoto State, and therefore, responsible for poor livelihood outcomes and pervasive poverty in the study area.

#### **Government Intervention**

Further to the above assertions, this study also examined the descriptive statistics (frequency) of the respondents’ perceptions about government intervention/support as the moderating factor, and the finding from the empirical data from the study area revealed that there is lack of government intervention in Sokoto State as the descriptive statistics of the individual measures (indicators) of the construct (see Table 6.44) showed that respondents largely never enjoy any support from government at all levels for instance 88.5 percent never enjoy government financial support, 89.2 percent never enjoy government social welfare package, 72.4 percent never enjoy subsidy on agriculture, and 92.9 percent never participated in policy action that affects them signifying lack of government-intended beneficiaries consultation. Similarly, the descriptive statistics of the construct (see Table 6.46) showed a mean value of 1.26,

and standard deviation of .27 signifying that majority of the respondents never benefit from government support which shows that there is absolute lack of government support in Sokoto State which has serious effect on the livelihoods outcomes of the households and thus a contributing factor to the scourge of poverty in the study area.

Accordingly, the above explains the need for a proactive platform that would provide synergy between the government and the people in the study area, particularly the rural dwellers, in the area of community and rural development, and enhance participation as well as entrench public trust on government and its institutions at the same time encourage participation and inclusion of the government program beneficiaries.

Consequently, the above overview drawn from the empirical data in the study area indicated that there is poverty of livelihood assets in Sokoto State which has affected the livelihood outcomes of the inhabitant households thereby making them more vulnerable to poverty, and therefore making effort towards reducing poverty in Sokoto State a mirage (illusion), so for poverty to be reduced in Sokoto State on sustainable basis this study, in compliance with the study's research objectives, and research questions concluded that:

The fundamental objectives of the present study are to examine the efficacy of the access to livelihood assets (human asset, social asset, physical asset, financial asset, natural asset) and livelihood strategy and the moderating effect of government intervention (GI) towards sustainable poverty reduction in Sokoto State-Nigeria. The findings, empirically, supported 7 hypotheses of the 12 hypotheses built; thus answering all the four research questions of the study, although with some

shortcomings, while on the other hand supported the position of the approach/theory (The Sustainable Livelihood Approach) which the study was built upon. Similarly, the findings of the present study are in conformity with the findings of some past empirical studies conducted in different contexts within the frame of sustainable livelihood approach.

Summarily, findings of this study complied with the objective of the study in the following ways:

Firstly, objective 1 of the study aimed at examining the impact of access to livelihood assets towards sustainable poverty reduction and the findings of this study met the goal of this study as all the five livelihood assets used as exogenous variables by the study were found to be empirically and statistically significant towards attaining sustainable poverty reduction because all the 5 hypotheses ( $H_1$ ,  $H_2$ ,  $H_3$ ,  $H_4$ ,  $H_5$ ) were supported by statistical results, therefore objective 1 of the study is achieved.

Secondly, objective 2 of this study was set to determine the impact of livelihood strategy on sustainable poverty reduction and the finding was in the affirmative term as the statistical result confirms that there is significant positive relationship between livelihood strategy and sustainable poverty reduction signifying that hypothesis 6 ( $H_6$ ) is supported, therefore the objective 2 of this study is met.

Thirdly, the objective 3 of this study was set to examine the moderating effect of government intervention on the relationship between access to livelihood assets (human asset, social asset, physical asset, financial asset and natural asset) and sustainable poverty reduction, however out of five (5) hypotheses only 1 hypothesis was supported by the finding of the study. In specific terms, government intervention



was found to have no moderating effect on the relationship between access to human asset and sustainable poverty reduction  $H_7$ ; access to social asset and sustainable poverty reduction  $H_8$ ; access to financial asset and sustainable poverty reduction  $H_{10}$ ; and access to natural asset and sustainable poverty reduction  $H_{11}$ . However, government intervention was found to have moderating effect on the relationship between access to physical asset, and sustainable poverty reduction signifying that hypothesis 9 ( $H_9$ ) is supported, therefore objective 3 of this study is met in two-folds, that is in the positive and negative terms, as 1 hypothesis ( $H_9$ ) is supported while 4 hypotheses ( $H_7, H_8, H_{10}, H_{11}$ ) are not-supported.

Fourthly, the objective 4 of this study was developed to examine the moderating effect of government intervention on the relationship between livelihood strategy and sustainable poverty reduction, however the statistical result derived from the empirical data collected from the study area did not support hypothesis 12 ( $H_{12}$ ) meaning that government intervention has no moderating effect on the relationship between livelihood strategy and sustainable poverty reduction although the affirmation is in the negative however the objective 4 of the study has been met as the motive is to examine if there is moderating effect and the findings revealed that there is no moderating effect. It is therefore, incumbent upon the researcher to say that the fundamental objectives of this study have been achieved as shown by the findings of the study.

Apart from the above, while other studies evaluated the effect of five livelihood assets in curbing the impact of natural disaster, poverty and vulnerability to it, this study explores both the impact of access to livelihood assets, adoption of livelihood as well as the influence of government intervention towards sustainable poverty reduction,

whose findings are supported by sustainable livelihood approach (SLA), particularly, the empirical findings of the study added to the existing body of knowledge on poverty reduction and sustainable livelihoods in particular and development studies in general.

In another view, the present study, additionally, threw more light on how second generation statistical tool, in particular, PLS-SEM can be used for analysis in sustainable livelihood and poverty reduction related studies. Furthermore, findings of the present study would go to a larger extent in providing a strategic framework on how Nigerian government and Sokoto State, in particular, could enhance poverty reduction related policies and programmes emulating from the results of the study and other inferences with regards to some experience mentioned, in particular Malaysia. Finally, the study ended with mentioning of some imperfections that avail opportunities as far directions for upcoming (future) research.

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## APPENDICES

### Appendix A

Ghazali Shafie,  
Graduate School of Government  
Universiti Utara Malaysia, 06010-  
Sintok- Kedah Darul Aman, Malaysia.  
Phone: (+604)928 71,  
Email:gsgsg@uum.edu.my



Dear Respondent,

#### ACADEMIC RESEARCH QUESTIONNAIRE

I am a Ph.D candidate at the above named University presently conducting research entitled "*Impact of access to livelihood assets towards sustainable poverty reduction in Sokoto state, Nigeria*". I will appreciate it if you would oblige to support the study by providing objective and sincere answers to the questions, as every response would be deemed positive. Similarly, responses provided would be treated with utmost confidentiality and would be exclusively for academic purpose.

Thank you most sincerely for your time and cooperation.

Yours sincerely,

Yusuf Kasim

PhD. Research Candidate,

Ghazali Shafie Graduate School of Government

Universiti Utara Malaysia,

06010, Sintok-Kedah, Malaysia.

Mobile No: +601136916434, +2348036135856, +23433589115

[Email.abulmaryameduonly@gmail.com](mailto:Email.abulmaryameduonly@gmail.com) / [elkassiyabo@gmail.com](mailto:elkassiyabo@gmail.com)

Supervisors:

Dr Ahmad Zubir Ibrahim

Dr Badariah Bint Haj Din



## SECTION A

### Demographic Information of the Respondent

<p>A1. AGE: .....</p> <p>A3. Nationality/State/Local Govt. ....</p> <p>A5. Level of Education:</p> <p>(1) PhD <input type="checkbox"/></p> <p>(2) MSc <input type="checkbox"/></p> <p>(3) BSc <input type="checkbox"/></p> <p>(4) Diploma <input type="checkbox"/></p> <p>(5) Sec/ Cert <input type="checkbox"/></p> <p>(6) Pri/ Cert <input type="checkbox"/></p> <p>(7) None <input type="checkbox"/></p> <p>A7 No. Of Household: .....</p> <p>(1) 2-5 <input type="checkbox"/></p> <p>(2) 6-10 <input type="checkbox"/></p> <p>(3) 11-15 <input type="checkbox"/></p> <p>(4) 16-20 <input type="checkbox"/></p> <p>(5) 20 and above <input type="checkbox"/></p> <p>A9. No. of Wives: .....</p> <p>A10. Have you attended any training:</p> <p>(1) Yes <input type="checkbox"/></p> <p>(2) No <input type="checkbox"/></p> <p>If yes, please specify .....</p> <p>A12. House Ownership:</p> <p>(1) Own House <input type="checkbox"/></p> <p>(2) Rent House <input type="checkbox"/></p> <p>If rented, how much per month.....</p> <p>A14. Water Supply (Pipe borne):</p> <p>(1) Yes <input type="checkbox"/></p> <p>(2) No <input type="checkbox"/></p> <p>If No, which source? .....</p> <p>A16. Savings:</p> <p>(1) Yes <input type="checkbox"/></p> <p>(2) No <input type="checkbox"/></p> <p>If yes, how much &amp; where .....</p> <p>A18. Loan: <input type="checkbox"/></p>	<p>A2. Sex: (1) Male <input type="checkbox"/></p> <p>(2) Female <input type="checkbox"/></p> <p>A 4. Marital Status:</p> <p>(1) Single <input type="checkbox"/></p> <p>(2) Married <input type="checkbox"/></p> <p>(3) Widow/widower <input type="checkbox"/></p> <p>(4) Divorcee <input type="checkbox"/></p> <p>A 6. Religion:</p> <p>(1) Islam <input type="checkbox"/></p> <p>(2) Christianity <input type="checkbox"/></p> <p>(3) Other.....</p> <p>A 8. Occupation:</p> <p>Main (1) Civil service <input type="checkbox"/></p> <p>(2) Farming <input type="checkbox"/></p> <p>(3) Fishing <input type="checkbox"/></p> <p>Part-time (4) Labour work <input type="checkbox"/></p> <p>(5) Hunting <input type="checkbox"/></p> <p>(6) Petty trading <input type="checkbox"/></p> <p>A 11. Good Health status:</p> <p>(1) Yes <input type="checkbox"/></p> <p>(2) No <input type="checkbox"/></p> <p>If no, specify .....</p> <p>A13. Electricity supply:</p> <p>(1) Yes <input type="checkbox"/></p> <p>(2) No <input type="checkbox"/></p> <p>If yes, what source .....</p> <p>A15. Distance to places:</p> <p>Dist. House to town..... Km</p> <p>Dist. House to market ..... Km</p> <p>Dist. House to work place..... Km</p> <p>Dist. House to hospital..... Km</p> <p>A17. Access to Subsidy:</p> <p>(1) Yes <input type="checkbox"/></p> <p>(2) No <input type="checkbox"/></p> <p>If yes, what kind .....</p>
--	--

(1) Yes

(2) No

☐

If yes, how much and where .....

### A19. Income

Source	Yes	No	Amount per month
<b>Main income:</b>			.....
Salary			.....
Agriculture	<input type="checkbox"/>	<input type="checkbox"/>	.....
Fishing	<input type="checkbox"/>	<input type="checkbox"/>	.....
	<input type="checkbox"/>	<input type="checkbox"/>	Sub-total
			.....
<b>Off farm income:</b>			.....
Trading	<input type="checkbox"/>	<input type="checkbox"/>	.....
Manual labour	<input type="checkbox"/>	<input type="checkbox"/>	.....
Selling of firewood	<input type="checkbox"/>	<input type="checkbox"/>	.....
Commercial driver	<input type="checkbox"/>	<input type="checkbox"/>	.....
Commercial motorcycle riding	<input type="checkbox"/>	<input type="checkbox"/>	Sub-total
	<input type="checkbox"/>	<input type="checkbox"/>	.....
<b>Other income sources:</b>			
Pension	<input type="checkbox"/>	<input type="checkbox"/>	.....
Zakat	<input type="checkbox"/>	<input type="checkbox"/>	.....
Remittance from children	<input type="checkbox"/>	<input type="checkbox"/>	.....
Charity/Arms	<input type="checkbox"/>	<input type="checkbox"/>	.....
			Sub-total
			.....
<b>Overall Total</b>			

## A20. Income Expenditure:

Expenditure type	Yes	No	Amount per month
Food & Drinks	<input type="checkbox"/>	<input type="checkbox"/>	.....
Health & medicine	<input type="checkbox"/>	<input type="checkbox"/>	.....
Utility bills	<input type="checkbox"/>	<input type="checkbox"/>	.....
Clothes	<input type="checkbox"/>	<input type="checkbox"/>	.....
Education	<input type="checkbox"/>	<input type="checkbox"/>	.....
Entertainment	<input type="checkbox"/>	<input type="checkbox"/>	.....

## A20. Property Ownership

Property type	Yes	No	If yes, how many
Transportation:			
Car	<input type="checkbox"/>	<input type="checkbox"/>	.....
Lorry	<input type="checkbox"/>	<input type="checkbox"/>	.....
Motor cycle	<input type="checkbox"/>	<input type="checkbox"/>	.....
Bicycle	<input type="checkbox"/>	<input type="checkbox"/>	.....
Other .....	<input type="checkbox"/>	<input type="checkbox"/>	.....
House Hold Goods:			
Television	<input type="checkbox"/>	<input type="checkbox"/>	.....
Radio	<input type="checkbox"/>	<input type="checkbox"/>	.....
Washing machine	<input type="checkbox"/>	<input type="checkbox"/>	.....
Fan	<input type="checkbox"/>	<input type="checkbox"/>	.....
Refrigerator	<input type="checkbox"/>	<input type="checkbox"/>	.....
Electric cooker	<input type="checkbox"/>	<input type="checkbox"/>	.....
Furniture	<input type="checkbox"/>	<input type="checkbox"/>	.....
Telecommunication:			
Mobile phone (GSM)	<input type="checkbox"/>	<input type="checkbox"/>	.....
Internet	<input type="checkbox"/>	<input type="checkbox"/>	.....
Farm Implements:			
Tractor	<input type="checkbox"/>	<input type="checkbox"/>	.....
Plough	<input type="checkbox"/>	<input type="checkbox"/>	.....
Water Pumping machine	<input type="checkbox"/>	<input type="checkbox"/>	.....

**Section B: Human Asset.** Please circle (0) or tick √ the most appropriate option.

The items below are in respect to human asset which are expected to enhance households' head access to livelihood assets which in turn impact toward sustainable poverty reduction.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

S/N	HA Items/Questions	Options				
HA01	I receive skills acquisition training	1	2	3	4	5
HA02	I have vocational skills	1	2	3	4	5
HA03	I have farming skills and experience	1	2	3	4	5
HA04	I acquired western education/level	1	2	3	4	5
HA05	I acquired Qur'anic	1	2	3	4	5
HA06	I have physical ability to labor	1	2	3	4	5
HA07	I have mental ability to labor	1	2	3	4	5
HA08	I have good health status	1	2	3	4	5

**Section C: Social Asset;** please circle (O) or tick ✓ the most appropriate option.

The items below are in respect to social asset which are expected to enhance household head's livelihood assets which in turn impact toward sustainable poverty reduction.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

S/N	SA Items/Questions	Options				
SA01	I am connected to a social network	1	2	3	4	5
SA02	I have a social status in the society	1	2	3	4	5
SA03	I represent my community in the local authority	1	2	3	4	5
SA04	I am a member of political party	1	2	3	4	5
SA05	I belong to a community base association	1	2	3	4	5
SA06	I belong to a cooperative society	1	2	3	4	5

**Section D: Physical Asset;** please circle (O) or tick ✓ the most appropriate option.

The items below are in respect of physical asset whose access to would enhance household's livelihood asset base which empower the household to stay out of poverty and vulnerability to it, thus ensuring sustainable poverty reduction.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

S/N	PA Items/Questions	Options				
PA01	I have access to good road	1	2	3	4	5
PA02	I have good means of transportation	1	2	3	4	5
PA03	I have good house made of cement blocks	1	2	3	4	5
PA04	I have household goods	1	2	3	4	5
PA05	I have access to good drinking water	1	2	3	4	5
PA06	I walk a short distance to fetch water	1	2	3	4	5
PA07	I have access to good sanitation facility	1	2	3	4	5
PA08	I have access to electricity	1	2	3	4	5
PA09	I use good cooking fuel/energy source	1	2	3	4	5
PA10	I have access to internet service	1	2	3	4	5
PA11	I have access to means of communication	1	2	3	4	5
PA12	My household has access to school	1	2	3	4	5
PA13	My household is close to market	1	2	3	4	5
PA14	My household is close to hospital	1	2	3	4	5

**Section E: Financial Asset;** please circle (0) or tick ✓ the appropriate option.

The items below are in respect of financial asset whose access to could enhance the livelihood asset base of households and in turn ensure sustainable poverty reduction.

1	2	3	4	5
Never	Rarely	Sometime	Often	Always

S/N	FA Items/Questions	Options				
FA01	I save money for future use	1	2	3	4	5
FA02	I have livestock to sell in time of needs	1	2	3	4	5
FA03	I have jewelries to sell in time of needs	1	2	3	4	5
FA04	I do receive pension every month	1	2	3	4	5
FA05	I do receive salary every month	1	2	3	4	5
FA06	I do receive financial assistance from government	1	2	3	4	5
FA07	I do receive remittance from members of the family	1	2	3	4	5
FA08	I do engage in petty trading to increase my income	1	2	3	4	5
FA09	I do engage in commercial labor for more income	1	2	3	4	5

**Section F: Natural Asset;** please circle (0) or tick  $\sqrt$  the appropriate option.

The items below are in relation to natural asset whose access to enhance livelihood assets base of the household which ensures sustainable poverty reduction.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

S/N	NA Items/Questions	Options				
NA01	I have enough land for cultivation/farming	1	2	3	4	5
NA02	I have land that is of good soil quality	1	2	3	4	5
NA03	I have access to river/water resources for commercial fishing	1	2	3	4	5
NA04	I have access to river/water resources for irrigation	1	2	3	4	5
NA05	I have access to mineral resources for commercial activities (soil/sand, clay, solid minerals)	1	2	3	4	5
NA06	I have access to economic trees for commercial purposes	1	2	3	4	5
NA07	I have access to forest trees for commercial firewood.	1	2	3	4	5
NA08	I have access to grass and shrub for sell	1	2	3	4	5

**Section G: Livelihood Strategy;** please circle (0) or tick✓ the appropriate option.

The items below are related to livelihood strategy that a household head adopt to enhance livelihood assets and to keep the household secured from poverty and vulnerability to it.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

S/N	LS Items/Questions	Options				
LS01	I do engage in formal work.	1	2	3	4	5
LS02	I engage in farming for subsistence	1	2	3	4	5
LS03	I engage in off-farm labor	1	2	3	4	5
LS04	I engage in commercial motorcycle riding to earn income	1	2	3	4	5
LS05	I raise and sell livestock (cattle, goats, sheep, and poultry.	1	2	3	4	5
LS06	I do run small scale business/ petty trading	1	2	3	4	5
LS07	I do migrate to neighboring city to earn livelihood	1	2	3	4	5
LS08	I do migrate to other country.	1	2	3	4	5
LS09	I borrow money from commercial banks	1	2	3	4	5
LS10	I borrow money from government micro finance institution	1	2	3	4	5
LS11	I borrow money from family members	1	2	3	4	5
LS12	I borrow money from family members	1	2	3	4	5
LS13	I rely on less expensive food	1	2	3	4	5
LS14	I borrow food from individual	1	2	3	4	5
LS15	I purchase food on credit	1	2	3	4	5
LS16	I reduce number of meals per day	1	2	3	4	5

**Section H: Government Intervention;** please circle (0) or tick✓ the most appropriate option. The items below are measures concerning the efficacy of government intervention policies and programmes towards poverty reduction and how the poor adjudge the intervention.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

S/N	GI Items/Questions	Options				
GI01	I do receive government financial support	1	2	3	4	5
GI02	I do receive governments social welfare package	1	2	3	4	5
GI03	Government provides support to small enterprises	1	2	3	4	5
GI04	Government poverty reduction policies are impacting positively	1	2	3	4	5
GI05	Government poverty reduction policies are pro-poor	1	2	3	4	5
GI06	Government consults me on poverty reduction related decision concerning my household	1	2	3	4	5
GI07	Government involves me directly in the design and implementation of poverty reduction policies.	1	2	3	4	5
GI08	Government poverty reduction institutions and policies are effective and efficient	1	2	3	4	5
GI09	Government subsidizes Agriculture	1	2	3	4	5
GI10	Government provide incentives to boost food production	1	2	3	4	5

**Section E: Sustainable Poverty Reduction;** please circle (0) or tick  $\sqrt$  appropriately the most appropriate option. The items below are measures of sustainable poverty reduction which is achievable through having unhindered access to livelihood assets.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

S/N	SPR Items/Questions	Options				
SPR01	My income level increased	1	2	3	4	5
SPR02	My saving and investment increased	1	2	3	4	5
SPR03	My household is livelihood assets secured	1	2	3	4	5
SPR04	My household is food secured	1	2	3	4	5
SPR05	I have good access to basic physical infrastructure	1	2	3	4	5
SPR06	I can send my children to school	1	2	3	4	5
SPR07	I can buy clothes to my family	1	2	3	4	5

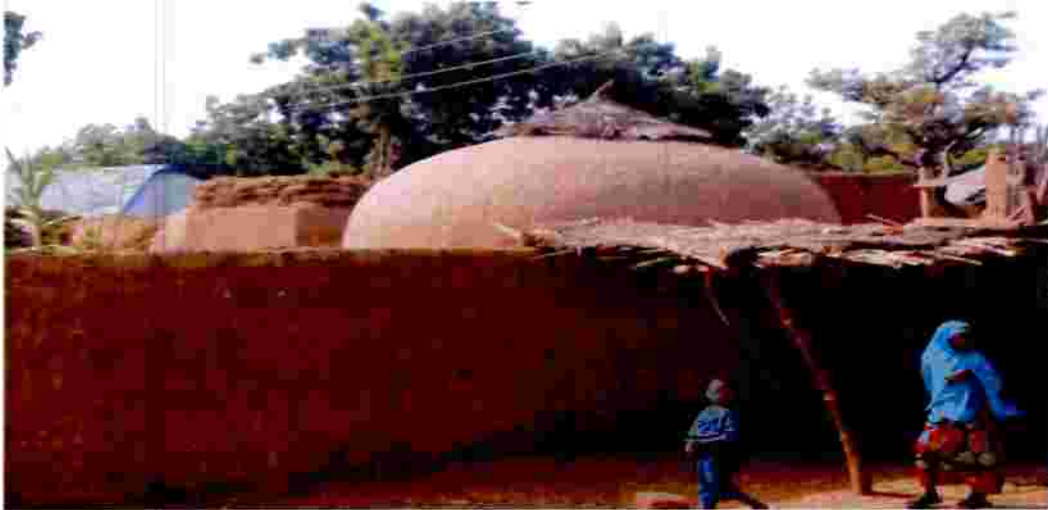


SPR08	I have a good shelter	1	2	3	4	5
SPR09	Health status of my household improved	1	2	3	4	5
SPR10	My skills and capabilities improved	1	2	3	4	5



**UUM**  
Universiti Utara Malaysia

## Appendix B



Common type of housing system in Balle, Gudu Local Government of Sokoto State

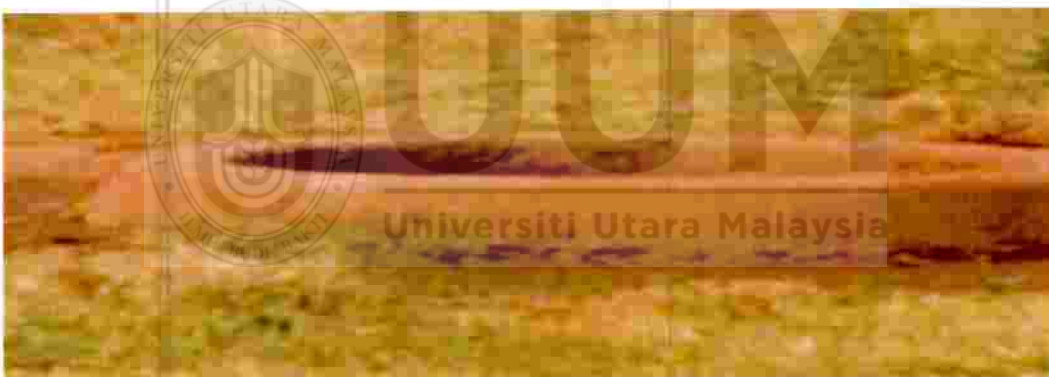


Type of housing system in Gidan Liman, Bodinga Local Government



Type of housing system in Bulbuli, Yabo Local Government

## Appendix C



Sources of drinking water in Gada, Bodinga and Tureta Local Governments of Sokoto State.

## Appendix D



Flood affected farm land in Giyawa, Goronyo Local Government



A cross-section of once flood affected household heads and the Researcher in Giyawa Goronyo Local Government of Sokoto State.



## Appendix E



Typical rural feeder road

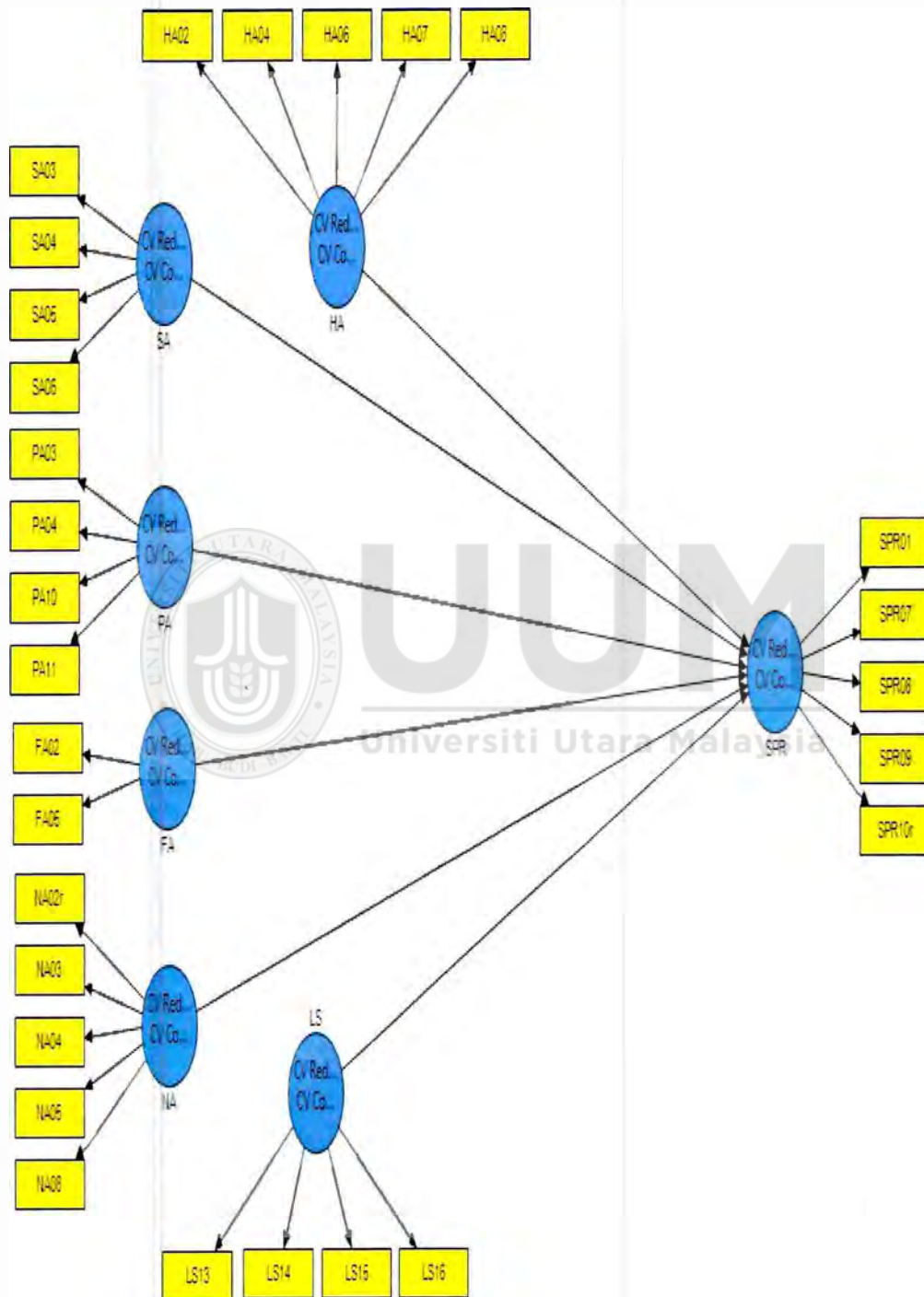


Typical township road in Balle, Gudu Local Government



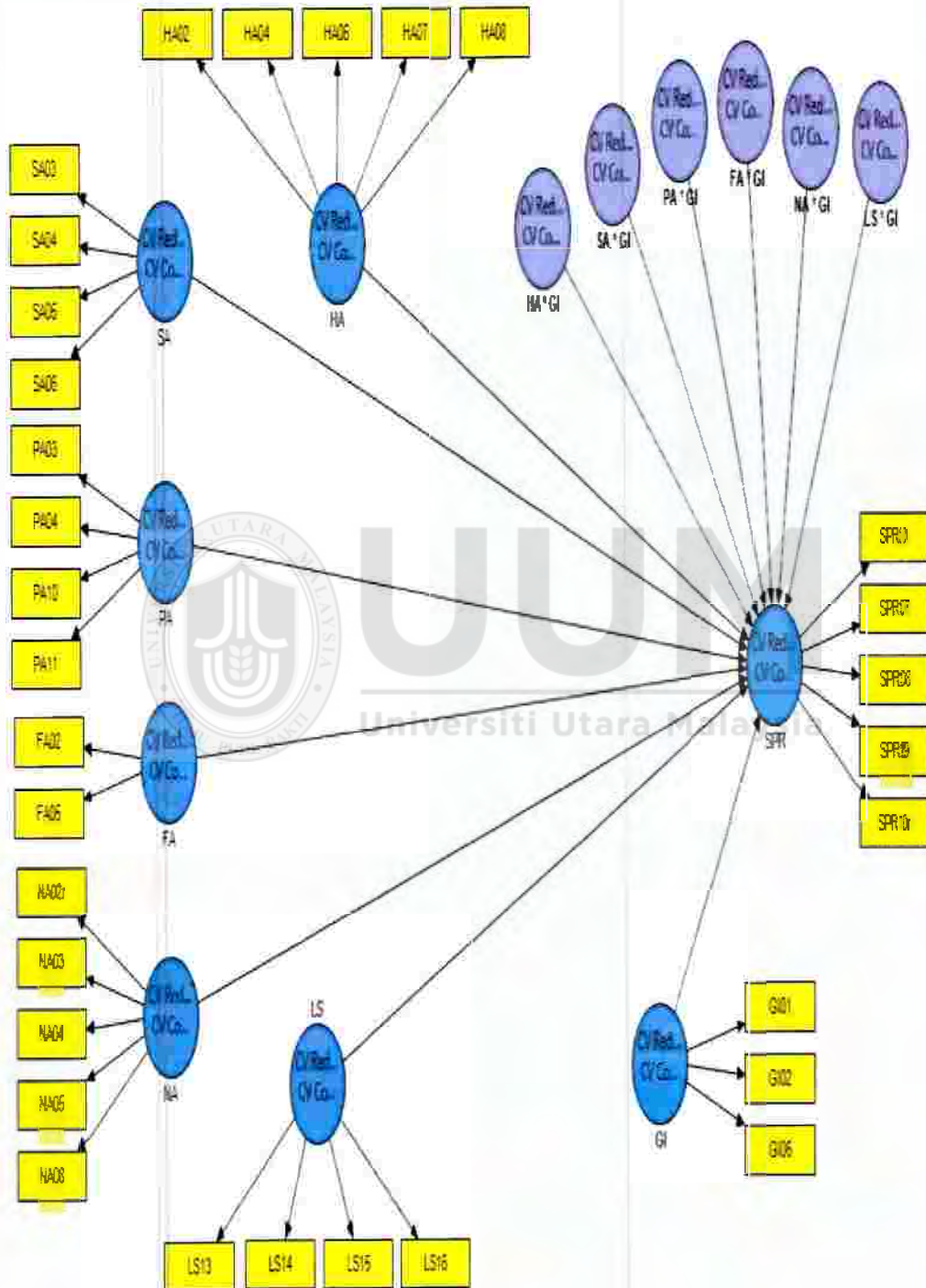
The Researcher with some household heads in Alasan, Tambuwal Local Government

## Appendix F



Model Predictive Relevance (Direct Relationship)

## Appendix G



Model Predictive Relevance (Interaction Effect)

## Appendix H



HAZALI SHAFIE GRADUATE SCHOOL OF GOVERNMENT  
UUM Kolej Undang-Undang, Kerajaan dan Pengajian Antarabangsa  
Universiti Utara Malaysia  
06010 UUM SINTOK  
KEDAH DARUL AMAN  
MALAYSIA



Tel: 604-928 7751/7752  
Faks (Fax): 604-928 7799  
Laman Web (Web): [www.gageg.uum.edu.my](http://www.gageg.uum.edu.my)

KEDAH AMAN MAKMUR • BERSAMA MEMACU TRANSFORMASI

Our Ref. UUM/COLGIS/GSGSG/PEL: 900912

Date : August 17, 2016

### TO WHOM IT MAY CONCERN

Dear Sir/Madam

### CERTIFICATION OF STUDY

This is to certify that Yusuf Kasim (Matric No: 900912) is a postgraduate student in Doctor of Philosophy (Development Management) at the College of Law, Government and International Studies of Universiti Utara Malaysia (UUM).

College	: College of Law, Government & International Studies
Admission Session	: Sep 2015/2016 (A151)
Current Session	: Feb 2015/2016 (A152)
Number of Current Semester	: 2
Programme Structure	: Research
Research Title	: The Impact Of Access to Livelihood Assets Towards Sustainable Poverty Reduction In Sokoto State - Nigeria
Main Supervisor	: Dr. Ahmad Zubir Ibrahim
Second Supervisor	: Dr. Badariah Hj. Din

Please be informed that this student has defended his proposal for Ph.D on August 1, 2016 at UUM, Sintok, Kedah. He has passed with minor correction. His proposal correction has been approved on August 16, 2016.

Thank you.

"KNOWLEDGE, VIRTUE, SERVICE"

Yours faithfully

(AZAM ARNI BINTI MOHD NOOR)

Social Research Officer

Tel: 04-9287753/Fax : 04-9287799

Email: [arni@uum.edu.my](mailto:arni@uum.edu.my)

c.c. -

Dr. Ahmad Zubir Ibrahim (Supervisor)

Dr. Badariah Hj. Din (Supervisor)

Universiti Pengurusan Tertemuka  
The Eminent Management University



## Appendix I



GHAZALI SHAFIE GRADUATE SCHOOL OF GOVERNMENT  
UUM Kolej Undang-Undang, Kerajaan dan Pengajian Antarabangsa  
Universiti Utara Malaysia  
08010 UUM SINTOK  
KEDAH DARULAMAN  
MALAYSIA



Tel: 604-928 7754/7752  
Faks (Fax): 604-928 7799  
Laman Web (Web): [www.gagag.uum.edu.my](http://www.gagag.uum.edu.my)

**"KEDAH AMAN MAKMUR • BERSAMA MEMACU TRANSFORMASI"**

Reference No. : UUM/COIGIS/GSGSG/900912

Date: August 21, 2016

TO WHOM IT MAY CONCERN

Sir/Madam

**DATA COLLECTION FOR PH.D THESIS**

This is to certify that Yusuf Kasim (Matric Number : 900912) is a full time Doctoral student at Universiti Utara Malaysia, Sintok, Kedah.

He needs to collect data for his research in order to fulfill the requirements of his programme.

We duly hope that your organization will be able to assist him in getting the necessary information for his research.

Thank you.

**"KNOWLEDGE, VIRTUE, SERVICE"**

Yours faithfully,

  
(JAMILAH BINTI SAMSUDIN)

Principal Assistant Registrar

On behalf of Dean

Ghazali Shafie Graduate School of Government

Tel : 04-9287752 Fax: 04-9287799

Email : [sjamilah@uum.edu.my](mailto:sjamilah@uum.edu.my)